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...OGICAL SURVEY.

ENGLAND AND WALES.

THE

WATER SUPPLY OF BERKSHIRE

FROM UNDERGROUND SOURCES.

BY

THE LATE J. H. BLAKE, F.G.S., Assoc.M.Inst.C.E.

WITH CONTRIBUTIONS BY

WILLIAM WHITAKER, B.A., F.R.S.,

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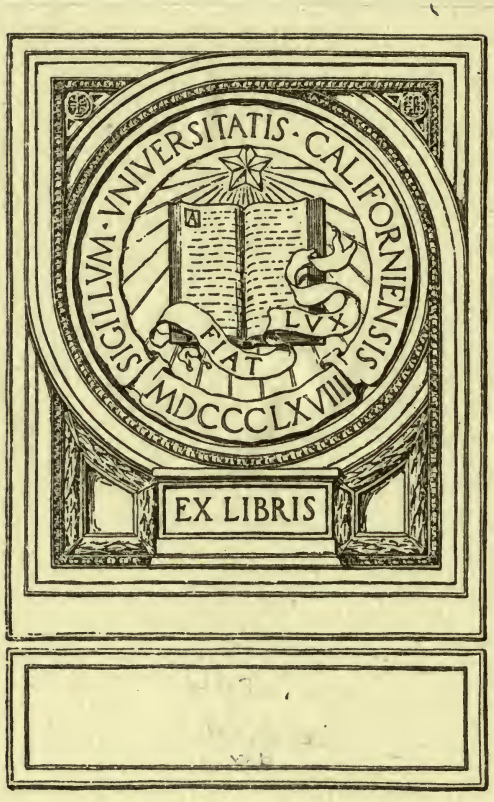
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MEMOIRS OF THE GEOLOGICAL SURVEY.

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PREFACE.

This is the second instalment of a series of Memoirs on county water supplies, the first instalment, relating to the Water Supply of Sussex, having been published in 1899. The object of the work is to gather together all the records of wells and borings, both published and unpublished, so as to furnish data which will be of great service to future seekers after water and which would not otherwise be available.

We are indebted for many of these records to well-sinkers who have gladly communicated them in return for advice and information always freely given at this office.

The revision of the first proofs of this Memoir was accomplished by Mr. Blake in the early part of this year, not very long before we had to lament his sudden death on March 5th. To Mr. W. Whitaker we are particularly indebted for help which he has rendered during the preparation of the Memoir.

J. J. H. Teall, Director.

Geological Survey Office,
28, Jermyn Street, London.
29th July, 1901.

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THE WATER SUPPLY OF BERKSHIRE

FROM UNDERGROUND SOURCES.

INTRODUCTION.

The quantity of water to be obtained from underground sources in any locality depends upon the hydro-geological structure of the district, and its quality upon the chemical character of the material or strata through which it has percolated. Deep well waters "are almost always bright, sparkling, palatable, and wholesome; whilst their uniformity of temperature throughout the year renders them cool and refreshing in summer, and prevents them from freezing readily in winter. Such waters are of inestimable value to communities, and their conservation and utilization are worthy of the greatest efforts of those who have the public health under their charge." *

In the construction of both deep and shallow wells, the greatest care should always be taken to shut out all surface water, in order that the underground supply should not be contaminated therewith. The site for a well, also, should be as far away as practicable from any possible source of pollution.

When a village, or other community, is dependent for its water supply upon wells sunk into a porous formation overlying an impervious one, such as Upper Greensand overlying Gault, or Lower Bagshot Sand overlying London Clay, or Valley Gravels resting upon different clay-formations; then, too much attention cannot be paid to drainage, by making all drains and cesspools water-tight; in order that nothing deleterious should be permitted to soak through and pollute the water in the wells. Inasmuch as the well is usually deeper than the cesspool, and often within a few feet of it, the former is almost certain to drain the latter unless it is cemented and made water-tight. This abominable state of affairs has been, and is still, a very common occurrence in many districts. "Unfortunately, excrementitious liquids, especially after they have soaked through a few feet of porous soil, do not impair the palatability of water; and this polluted liquid is consumed from year to year without a suspicion of its character, until the cesspool and the well receive infected sewage, and then an outbreak of epidemic disease compels attention to the polluted water." †

Outline of the Geology as far as relates to Water-Supply.

The greater portion of Berkshire is situated in the western part of the London Basin, and its south-western boundary is close to the apex of the triangular mass of Tertiary formations

* Rivers Pollution Commission. Sixth Report, 1874, p. 425.

" " " " " " pp. 68, 69.

lying in the trough. The general dip or inclination of the various strata is more or less in a south-easterly direction, excepting in a very small area round Shalbourn in the south-western corner of the county. The underground water, in the different water-bearing beds, flows in the same direction as the dip. The average inclination of the strata across the county in a south-south-easterly direction, along a line extending from Abingdon to Aldermaston wharf and south of the river Kennet, is a little less than three-quarters of a degree; and in an easterly direction from Newbury to Wokingham the average dip is about one-quarter of a degree, and from Wokingham to Ascot less than one-eighth.

The geological formations that appear at the surface in the county, together with their water-bearing capacities, etc., are as follows:—

Systems.	Geological Formations.	Supply and character of the Water in Berkshire.
Recent	Alluvium	Variable, often bad, liable to pollution.
	Valley Loam	None.
	Valley Gravel	Abundant and of good quality in places, but very liable to pollution.
Pleistocene	Plateau Gravel	Small supplies of very variable character, liable to surface-contamination.
	Pebble Gravel	Very little.
	Clay-with-flints, Loam, and Tertiary Debris (overlying Chalk).	Usually none, but a little in places.
Eocene	Upper Bagshot Beds	Small supply, soft, of good quality.
	Bracklesham Beds	Variable, but generally bad.
	Lower Bagshot Beds	Very soft, of excellent quality, but sometimes ferruginous.
	London Clay	Small supply, variable in character, from its "basement-bed" only.
	Reading Beds	Good supply, often soft, from the sands of this formation.
Upper Cretaceous.	Upper Chalk	Abundant supply of most wholesome water, but hard from carbonate of lime; temporary hardness.
	Middle Chalk	
	Lower Chalk	
	Upper Greensand	Abundant, excellent, but sometimes hard from carbonate of lime.
	Gault	None.
Lower Cretaceous.	Lower Greensand	Variable in quantity, soft, good, but sometimes saline or ferruginous.
Upper Jurassic.	Portland Beds	Small supply, hard from carbonate of lime.
	Kimeridge Clay	None.
	Corallian Beds	Supply and quality good, but variable.
	Oxford Clay	None.

Jurassic Rocks.

The Lower Lias is the oldest geological formation that has been reached by boring in the county of Berkshire. This was in 1829, at Wytham, near Oxford, when a boring having passed through 15 feet of loam and sand, and 258 feet of Oxford Clay and Kellaways Rock (Upper Jurassic), penetrated the following formations (as classified by Mr. H. B. Woodward) and which do not appear at the surface anywhere in the county, viz.:—

		Feet.
Middle Jurassic	Cornbrash	19
	Forest Marble	24½
	Great Oolite	96
	Inferior Oolite	35½
Lower Jurassic	Upper Lias	14½
	Middle Lias	170½
	Lower Lias	

For full details of this boring see p. 103. No mention is given in the original account, published by John Phillips in 1871,* of the occurrence of water in any of the beds, excepting in the sand (12 feet from the surface) overlying the Oxford Clay.

In a boring made to a depth of 439½ feet by Messrs. Le Grand & Sutcliff at the City Brewery, Oxford, in 1898 (the site being only about a quarter of a mile outside the Berkshire county-boundary, and a little more than two miles and a quarter from the site of the boring at Wytham), the following geological formations were penetrated:—

		Feet.
Pleistocene	Valley Gravel, &c.	30
Upper Jurassic	Oxford Clay	210
Middle Jurassic	Cornbrash	17
	Forest Marble	32⅔
	Great Oolite	88
	Upper Estuarine Series	28½
	Inferior Oolite	16⅓
Lower Jurassic	Lower Lias	17

It was anticipated that an ample supply of water would have been obtained from the Great Oolite formation; but, with the exception of a large quantity of water in the Valley Gravel overlying the Oxford Clay, only a very little water was met with—quite insufficient for brewery purposes—here and there in sandy seams etc., in the underlying formations, but which rose to within three feet of the surface of the ground. On undoubted Lower Lias being reached the boring was abandoned.

Oxford Clay.

This formation, which consists of grey and bluish-grey clay, shaly, calcareous, pyritous, and carbonaceous in places, with bands of septaria, &c., is the oldest that appears at the surface in the county, and occurs in the most northern part of it, on the south of the Thames between Buscot (S. of Lechlade) and Wytham,

* Geology of Oxford and the Valley of the Thames, pp. 296, 297.

near Oxford. The boring at Wytham penetrated 258 feet in thickness of this clay; that at St. Clement's Brewery, Oxford, 265 feet;* and that at the City Brewery, Oxford, 210 feet; these two latter being only a short distance outside the county. These figures, however, do not represent the total thickness of the Oxford Clay; which is stated to be much thicker in the north-western part of the county, near Lechlade.†

No supply of water can be expected to be obtained from this impermeable argillaceous formation.

Corallian Beds.

These beds, in places between 70 and 80 feet in total thickness, come to the surface in the north-western part of the county, forming a tract of country extending from Coleshill, west of Farringdon, to near Oxford. The upper division of these Corallian Beds—much less in thickness than the lower—consists of oolitic limestone (sometimes pisolitic) and rubbly coral-rock with marl, known as "Coral Rag;" and the lower—essentially an arenaceous deposit—of loose sand with bands of sandstone, calcareous and cherty in places.

Good supplies of water are frequently to be obtained from these beds, but the amount varies considerably in different localities, due apparently to interruptions in the circulation of the water, from the presence of clay-seams, joints filled with clay, faults, &c. Sometimes water is met with in the upper part of the formation, held up by seams of clay, or beds of intensely hard chert &c.; but the largest quantity is usually to be found lower down, held up by the underlying Oxford Clay.

Kimeridge Clay.

The Kimeridge Clay is exposed at the surface to the south of the Corallian Beds, and stretches from south-west of Shrivenham to beyond Abingdon, and then northward by Wootton and Bagley Wood to Chawley brickyard. It is apparently 140 feet thick at Denchworth, 111 at Goosey, 94 at Wantage, and less at Chawley.

It consists of bluish-grey and blackish clay and shale, with septaria, carbonaceous matter, pyrites, and selenite in places.

This clay-formation being impervious to water, no supply can be expected from it.

Portland Beds.

The Portland Beds, which intervene in some localities in Oxfordshire and other counties, are unrepresented in Berkshire; except at the village of Bourton, south of Shrivenham Station,

* This boring was continued to a depth of 400 feet when salt water was obtained.

† *See* H. B. Woodward, Mem. Geol. Survey; Jurassic Rocks of Britain, vol. v, p. 40.

where a small outlier of Portland Beds occurs. Here limestones and sands, perhaps 10 feet or more thick, have been observed.

Lower Greensand.

This formation occurs at the surface in an irregular manner in the north-western part of the county, where it rests upon the Kimeridge Clay.

Several small patches of Lower Greensand appear to the south of Shrivenham; an outlier occurs at Farringdon Clump, and another at Badbury Hill, and a large irregular mass of it extends from near Farringdon by Little Coxwell, Furze Hill, Fernham, Alfred's Hill, to near Uffington and Balking. In the direction of Oxford, and 12 miles distant from Farringdon, there is a large outlier at Boar's Hill, and small outliers at Hurst Hill, and north-east of Sunningwell. The beds here consist of brown yellow, and chocolate-coloured coarse siliceous loose sand, but ferruginous and indurated in places. In the Farringdon district, the lower portion of the formation consists of fossiliferous gravel, known as "the sponge-gravels," made up of pebbles of quartz, lydian-stone, well-preserved fossil sponges, &c.; loose in some places, but cemented together in others, forming a ferruginous quartzose conglomerate, 25 to 40 feet or more in thickness. The upper portion consists of brown, yellow, white, and chocolate-coloured siliceous loose sand, with grey and brown clay and loam in places, and ironstone bands.

Thus, the Lower Greensand in Berkshire occurs in several isolated patches of variable dimensions and thickness, and often at a considerable elevation above the surrounding district. On account of these physical and geological conditions, and although the loose or incoherent sands readily absorb a considerable proportion of the rainfall, a large quantity of the water escapes as springs, on the sloping ground, at the junction of the Lower Greensand with the underlying Kimeridge Clay; where the rain-water which had percolated through the sands would be held up, and would accumulate, the quantity varying according to seasonal changes. Consequently where the area exposed to the rainfall is small, the supply would become very limited, particularly after a dry season, when it might fail altogether. A larger supply—sufficient probably for local purposes, and of good quality, would be maintained where the area exposed to the rainfall is large, and the siliceous sands coarse and loose. When ironstone occurs in the sands the water might be slightly chalybeate, but not unwholesome, unless when very strongly impregnated. At Didcot the water was saline, and also at Shillingford (close to the county-boundary) in Oxfordshire.

At New Lodge, Windsor Forest, in the parish of Winkfield,* a deep boring reached the Lower Greensand at a depth of 1,234 feet, and penetrated it to a depth of 9 feet. It consisted of fine, sharp, light-brown sand, with water which rose to 7 feet 8 inches above the surface of the ground.

At Wantage,† a boring having penetrated 46 feet of Upper Greensand, and 233 feet of Gault, passed into Kimeridge Clay,

* *See* p. 95. † *See* p. 89.

Lower Greensand being absent; thus showing an interruption in the continuity of the Lower Greensand underground, at a depth of 280 feet from the surface.

*Gault.**

Unlike the Lower Greensand, the Gault outcrops in a regular manner, and extends in an unbroken band from near Ashbury to the Thames at Little Wittenham. In this north-western part of the county, the Wantage Brewery Co's. boring proved the thickness of this formation to be 233 feet, whereas, the Winkfield-boring (Windsor Forest), in the eastern part of the county, proved the thickness there to be 264 feet,—the base of the Gault being at a depth of 1,234 feet from the surface of the ground. From these, and other known facts as to the occurrence of this formation in adjoining counties, there is every probability that from its outcrop at the surface mentioned above, it continues southwards and eastwards underground of great thickness beneath the remainder of the county of Berkshire.

It consists of dark bluish and grey clay, micaceous shales, with a few bands and nodules of argillaceous ironstone, phosphatic nodules, pyrites, &c.

No water can be obtained from this impermeable clay formation.

*Upper Greensand.**

South of the area occupied by the Gault, the Upper Greensand conformably appears at the surface as a narrow irregular belt extending from Idstone by Ashbury to Kingston Lisle, from whence it increases in width in an easterly direction, in a variable manner, by Wantage, Milton Hill, and Didcot, to Wallingford. The upper portion of the formation, varying from 10 to 30 feet or more in thickness, consists of dark green sands containing numerous small grains of glauconite; and the lower portion about 50 to 60 feet or more in thickness, consists of whitish calcareo-siliceous strata, marly in places, and containing some layers of malmstone and hard beds of chert.

There is an abundant supply of excellent water in this permeable formation, where the area exposed to the rainfall is large, but a considerable quantity of it escapes as springs at its junction with the Gault, and sometimes higher up; (in a somewhat similar manner to that of the Lower Greensand) owing to the elevated position in the Upper Greensand, in projecting terraces or spurs, &c., above the plain of the Gault. These terraces consist of the lower portion of the formation, malmstone, &c., the green sands having been denuded; but these latter appear near the base of the Lower Chalk, from beneath which they outcrop. On account of the calcareous matter (carbonate of lime) in the strata, the water in some localities is a little hard but becomes very soft by boiling.

The Upper Greensand, in a similar manner to the underlying Gault, is probably continuous under Berkshire. It rises up to

* *See also* Memoir on Cretaceous Rocks of Britain, Vol. I. By A. J. Jukes-Browne. 1900.

the surface from beneath the London Basin in the south-western corner of the county, where a narrow little tract of the county projects in a southerly direction across the "Shalbourn Inlier" of Upper Greensand; which inlier is an anticlinal axis or arch, from which the Chalk has been denuded; and a continuation of the anticlinal curve of the Vale of Pewsey. This inlier of Upper Greensand consists of greyish and yellowish-brown sand with glauconite grains, and with layers of irregular blocks of hard grit. The thickness is uncertain, but probably over 45 feet, there being a well of that depth in it.

At the Winkfield-boring (Windsor Forest), the total thickness of the Upper Greensand was not more than 31 feet, its base being 970 feet beneath the surface.

Chalk.

The total thickness of the Chalk formation (Upper, Middle, and Lower, as now classified) underground in the eastern part of Berkshire, was proved by the deep boring at Winkfield (New Forest) to be 725 feet; the base being reached at a depth of 939 feet from the surface. In the north-western part of the county, the base of this formation reaches the surface, south of Wantage, &c.; along the lower part of the great chalk escarpment, which is a continuation of that of the Chiltern Hills; and, in a similar manner to that, consists of the Lower Chalk, Middle Chalk, and the lower part of the Upper Chalk. The beds have a slight southerly and south-easterly dip, and disappear beneath the covering of Tertiary formations in the southern and eastern part of the county; but abruptly rise to the surface in the south-western corner, around the Shalbourn inlier of Upper Greensand.

Lower Chalk.—This division, underground at Winkfield (Windsor Forest), was proved to be 219 feet in thickness; and in the western part of the county may be a little less. Where it appears at the surface, it forms a narrow irregular tract extending along the great escarpment from Idstone, where it is half-a-mile in width, to the south of Childrey and Wantage, where it varies from one mile and a half to two miles; and thence to Cholsey and Moulsford, where it is two miles and a half wide. There are outliers to the north at the Sinodun Hills and at Cholsey Hill. In the south-western corner of the county it appears as a narrow strip around the Shalbourn inlier of Upper Greensand.

The Lower Chalk consists of interbedded white and grey chalk, marly and gritty in places, and Chalk Marl with glauconitic marl (Chloritic Marl) at its base. Beds of marly rock, possibly the equivalent of the Totternhoe stone, occur in the upper part of the Chalk Marl, from which springs emanate along the lower part of the escarpment, at Latcombe Basset; Manor Farm, south of Wantage; East Lockinge; East Ginge, south of West Hendred, etc. These springs, which are of considerable volume, form streams which unite with others from springs in the Upper

Greensand, and after working various mills along their course, become important feeders to the Thames, which they join at Abingdon and Sutton Courtenay.

Middle Chalk.—The Middle Chalk appears at the surface over a considerable area westward of the Lambourn Downs, and in the valleys north and west of Lambourn, and outcrops as a narrow belt along the escarpment south of Letcombe Basset to the Chilton Downs, where it increases considerably in width and continues in a very irregular manner to near Moulsford, and from there south in the Thames Valley by Streatley and Basildon to Pangbourne. In the south-western corner of the county it appears as a very narrow belt around the Shalbourn Inlier of Upper Greensand.

Its thickness underground at Winkfield (Windsor Forest) is 177 feet, and its base occurs at 720 feet from the surface of the ground. It is apparently but little less in thickness in the western part of the county.

It consists of soft and hard rubbly and bedded white chalk, with a few occasional nodules of flint, and tabular flint in places, with seams of grey marl, etc., its uppermost bed being the "Chalk Rock,"—a cream-coloured limestone with glauconitic grains and numerous green-coated nodules, and its undermost, the "Melbourn Rock" or its equivalent, consisting of beds of hard nodular limestone, etc.

Upper Chalk.—In the western part of Berkshire there are three outliers of Upper Chalk; namely, at Kingston Down, White-horse Hill, near Wantage, and to the north of Lambourn. The western extremity of the great mass of continuous Upper Chalk is at Sparsholt Down, the boundary extending southward by Lambourn Downs to a little south of Lambourn, then westward beyond the county. The south-western boundary is a little south of Inkpen and West Woodhay, around the greater portion of the Shalbourn inlier of Upper Greensand. The northern boundary extends from Sparsholt Down along the upper part of the escarpment a little north of the "Ridge Way" or "Icknield Way" to the east of East Ilsley, then north to Churn Hill, and south-easterly with spurs to Streatley and Pangbourn. From here the Upper Chalk is continuous both easterly and southerly throughout the remainder of the county; but it is for the most part covered by Tertiary formations, capped in many places with Drift-deposits. It is exposed, however, at the surface over a considerable area south of the Thames, and around the Tertiary outlier at Bowsey Hill, between Wargrave and Maidenhead.

The thickness of the Upper Chalk at Winkfield (Windsor Forest) was proved to be 329 feet, its base being there at a depth of 543 feet from the surface of the ground. At Kingwood House, one mile and a half south-west of Lambourn, a thickness of 237 feet of Upper Chalk underlying 10 feet of Clay-with-flints, was proved by a dug-well, the "Chalk Rock," with its characteristic green-coated nodules, occurring there at a depth of 247 feet.

The Upper Chalk consists of soft white chalk, more or less evenly bedded, with numerous irregular-shaped nodules of flint along the planes of bedding, and sometimes in the matrix of the chalk between. Thin seams of tabular flint occasionally occur along the planes of bedding, and sometimes fill fissures or joints inclined at various angles.

Water in the Chalk.—For general purposes of water-supply, the chalk may usually be considered as one great permeable and water-bearing formation, inasmuch as the rain that falls upon its surface is readily absorbed, and percolates through its mass, irrespective of its tripartite divisions for the most part, and accumulates at its base as a huge underground reservoir of saturated chalk. The depth to which it is necessary to dig or bore to obtain a supply of water entirely depends upon the physical and geological structure of the district, and these being known the requisite depth can be calculated with great accuracy. When a well or boring is made in the Chalk where it is exposed at the surface, or merely covered with Drift-deposits, the level of the water in the well or bore-hole will be at the same level as the plane of saturation, and vary with it according to seasonal changes. But, when a boring or well is made through Tertiary formations into the underlying Chalk in the London Basin, the water being under hydrostatic pressure will rise in the bore-hole or well to nearly the same level as to where it entered the Chalk at its outcrop, and the level of the water will vary but slightly if at all.

Locally this great underground storage-reservoir of the London Basin may for practical purposes be considered inexhaustible, for it is replenished from extensive collecting areas of continuous and outcropping Chalk exposed to the rainfall. Moreover, in extracting the water, which is always charged with carbonate of lime in solution, etc., the porosity, channels, fissures, crevices, and cavities in the Chalk become enlarged, and consequently its storage-capacity proportionately augmented, and the supply increased with the age of the well or boring.

The Commissioners appointed to inquire into the Pollution of Rivers, etc., report on the quality of this underground water, as follows:—

"The unpolluted deep well waters from the chalk rank amongst the best and most wholesome with which we have become acquainted. They are almost invariably colourless, palatable, and brilliantly clear."*

Reading Beds.

These beds, the lowest of the Tertiary formations in Berkshire, crop out at the surface in the south-western corner of the county and form a narrow band between West Woodhay and Inkpen, from whence they increase to nearly a mile in width, and extend westerly for a distance of two miles, almost to the county-boun-

* Rivers Pollution Commission. Sixth Report, 1874, p. 102.

dary, where they form the apex of the triangular area occupied by the main mass of the Tertiary beds in the synclinal trough of the Chalk of the London Basin. From this western extremity the Reading Beds appear at the surface along the northern side of the London Basin, by Hampstead Marshall to the south of Newbury, where they pass under the valley-deposits of the river Kennet, and reappear at Thatcham. They extend in a northerly direction around Coldash Common to Oare; then southerly and easterly by Bucklebury to Bradfield and Englefield, where they disappear again beneath the valley-deposits of the Kennet south of Tilehurst. They crop out at Whitley Manor Farm, where they border the alluvium along the escarpment in a northerly direction to Reading, then range easterly and northerly by Sonning, beyond which they pass under the valley-deposits of the river Loddon. They reappear at Ruscombe, and continue in a north-easterly direction by White Waltham to Bray, where they disappear beneath the valley-deposits of the Thames and beyond the county.

Besides this outcropping mass of Reading Beds, which are continuous beneath the London Clay of the London Basin, there are numerous outliers in the county to the north of it, some of which are of considerable area, whilst many others are very small. The largest are Bowsey Hill, to the east of Wargrave (which includes some London clay); Tilehurst, west of Reading; Yattendon; Frilsham; Winterbourne; and Wickham, north-west of Newbury.

The Reading Beds in Berkshire generally vary from about 70 to 90 feet in thickness, but are a little less in places. They consist of variously coloured mottled plastic clays, and more or less loose sands, with a persistent "bottom-bed," generally from about 7 to 10 feet in thickness, of interstratified dark bluish-grey stiff clay (sometimes laminated) and brown and olive-green coloured glauconitic sands. The mottled clays generally occur in the upper part of the formation, varying from about 30 to 50 feet in thickness, and the sands beneath them from about 20 to 40 feet.

Good supplies of water are frequently obtained from the saturated sands of this formation, and often of a soft character. But, when the sands are loamy and compact, as they sometimes are beneath the London Clay of the London Basin, the yield of water is much less copious. When a boring is made in the London Basin through the impervious London Clay into these pervious and water-bearing sands of the Reading Beds, the water will rise in the bore-hole to nearly the same level as to where the rain-water is absorbed by the sands at their outcrop. Around outliers of Reading Beds, and also along the outcrop of the main mass, a large quantity of the rain-water that has percolated through the sands is thrown out by the clays, etc., in the "bottom-bed," and thus escapes at the junction of the Reading Beds with the Chalk, in which latter formation it frequently disappears in funnel-shaped cavities known as "swallow-holes,"

London Clay.

This great clay formation appears at the surface within the area occupied by the main mass of the Reading Beds, with Bagshot Beds and Drift-deposits overlying it in many places, and it also occurs on some of the outliers of the Reading Beds, with overlying Drift-gravel. It consists of stiff brown and dark bluish-grey clay, with layers of concretionary masses of argillaceous limestone known as "septaria." It is, for the most part, uniform in character throughout its entire mass, with the exception of its "basement bed," which consists of interstratified loam, clay, and brown and olive-green coloured glauconitic sands, with septaria and concretionary argillaceous ironstone nodules, flint pebbles, shells, lignite, and iron pyrites, and sometimes the whole bed is of a blackish colour from the presence of carbonaceous matter. The topmost part is also sandy.

The thickness of the London Clay underground at Ascot Race Course (where it is overlaid by Lower Bagshot Sand) is 349½ feet, its base being 417½ feet beneath the surface; and at Windsor Park, near Cumberland Lodge (where it is similarly overlaid by sand) it is 314 feet thick. From this eastern side of the county the London Clay gradually decreases in thickness to the western side, in a more or less wedged-shaped manner, between the discontinuous or disconnected Bagshot Sand above it, and the continuous Reading Beds below it. Borings have proved the thickness of the London Clay in many parts of the county; amongst other places the following may be mentioned, namely, at Wokingham 273 feet, Bearwood 256, Burghfield 205, Stratfield Mortimer 164½, Inkpen, 52.

The great mass of the London Clay is almost entirely impervious to water, but its "basement bed" (described above) varying in Berkshire from about 6 to 16 feet in thickness, is a water-bearing bed, and small supplies—sufficient for a house or two, or farm, etc.,—can be obtained by boring down to it in many localities in this western portion of the London Basin, when the water will rise in the borehole to nearly the same level as where the water enters at its outcrop. Sometimes when the water in this bed is first reached or tapped it rises in the borehole quickly, at other times sluggishly or very gradually, literally creeping up, and taking sometimes a few hours to reach its permanent level. A well or shaft, carefully bricked in cement, to act as a reservoir, should be sunk to about 12 to 15 feet or more (according to the supply required) below the level to which the water will rise in the borehole. Should the water be extracted or pumped from the well faster than the supply comes in from the borehole, and the water-level in the well towards the end of the day be considerably lowered, it will rise and recover its permanent level during the following night, when any sand that may be brought up by the water will have had time to subside. The quality of the water from this basement-bed varies in different localities, according to the presence of the ingredients mentioned as frequently occurring in its strata, such as iron pyrites, etc.; but the water improves both in quality and quantity by use.

The above remarks are generally applicable to other water-bearing geological formations, when water is obtained from them under similar conditions.

Bagshot Beds.

This formation, which mostly consists of sand, occurs in detached portions along the southern part of the County. It has naturally a tripartite arrangement of upper and lower light coloured sands, with dark green sand and argillaceous strata intervening. These three divisions are persistent, and therefore will be treated of separately.

Lower Bagshot Beds.—This division appears at the surface in the south-eastern part of the county, where it is continuous with the main mass in the London Basin; and extends from Virginia Water westward to a little beyond Finchhampstead, and from there northward in a very irregular manner to Bearwood. There are outliers at Wokingham, Toutley, Arborfield, Farley Hill, and Riseley Common,—a portion only of the latter projecting into the county. A large outlier extends westward from Mortimer and Sulhampstead to Wasing; another from Brimpton to beyond Wash Common, S. W. of Newbury; whence south of the river Kennet there are several smaller outliers extending nearly to Inkpen. North of the Kennet, a large and very irregular outlier extends westward from the north of Woolhampton by Bucklebury Common to Coldash Common, to the north of which there are a few small outliers; also, one at Winterbourne, and two westward of Cold Ash. Most of these large and small outlying masses are capped with Drift plateau gravel.

The Lower Bagshot Beds apparently rest more or less conformably upon the London Clay, there being passage-beds in places; and they consist of buff, brown, yellow, grey and white sands, with seams and thin beds of pale grey clay (pipe-clay), and occasionally laminated white, grey, and liver-coloured clays. The sands are well stratified and often false bedded, frequently micaceous, ferruginous in some localities, and contain a few seams and beds of flint pebbles. The formation is apparently from about 100 to 120 feet in thickness in the south-eastern part of the county, and of less thickness elsewhere.

Good supplies of water, excellent in quality and very soft in character, are sometimes to be obtained from these Lower Bagshot sands, when the physical and hydro-geological conditions are favourable; but, inasmuch as the beds are generally in an elevated position, the rain-water which is readily absorbed by the sands and percolates more or less through their mass, is thrown out as springs at their junction with the London Clay, and frequently also at higher levels where beds of clay intervene. When Plateau Gravel overlies the Bagshot Sands, it sometimes interferes with the free passage of the water downwards into the sands, when it is cemented together into a conglomerate

or ferruginous mass known as "iron-pan," which holds up the water, in consequence of which ponds are often to be seen on the surface after much rain; and springs are frequently thrown out at or near the junction of the Drift gravel with the underlying Bagshot sand. When beds or nodules of iron-sandstone are present in the Bagshot sands in large quantities, as they are sometimes near the base of the formation in some localities, the water would probably be more or less chalybeate in character but not necessarily unwholesome. Springs thrown out near the junction of the Lower Bagshot with the London Clay under such conditions are often of an iron-rust colour, which when flowing through peaty alluvial deposits would tend to the formation of bog-iron ore. In most districts, however, the Lower Bagshot Beds yield a very soft and pure water, provided it is not contaminated from the surface.

Bracklesham Beds. (*Middle Bagshot*).—These beds lie conformably on the Lower Bagshot, appear at the surface near Sunningdale railway-station, and extend westward to Finchampstead. They vary from about 40 to 60 feet in thickness, and consist of yellow, brown, and olive-green coloured glauconitic sands in their upper part; and brown, grey, and liver-coloured clays, generally laminated, in their lower part. The sands are sometimes false bedded, and contain a few layers and beds of flint pebbles; also iron-sandstone and nodules, lignite and other carbonaceous matter, and casts of shells.

Small supplies of water, of variable character, but frequently bad, are obtained from these Bracklesham Beds, and springs are thrown out at different horizons by the clay beds.

Upper Bagshot Beds.—The main mass of this upper division of sand forms the high ground, of very irregular shape, at and in the neighbourhood of Easthampstead Plain. Two outliers occur at Finchampstead, and four on Bagshot Heath within the county. The sand is of a buff colour, yellowish and whitish in places; generally devoid of signs of stratification and bedding; and flint pebbles seldom occur in it. It contains small concretions of iron-stone, often with casts of shells. Plateau Gravel overlies it at Easthampstead Plain and at Finchampstead Ridges.

Generally only small supplies of water can be obtained from these sands, on account of their irregular physical and elevated position. Springs are thrown out at or near their junction with the underlying Bracklesham Beds, where a flint pebble-bed often occurs. The water is usually very soft and of good quality.

On account of the very soft character of the water from these Bagshot siliceous sands, both Upper and Lower, and from the general absence of lime in the strata, neither lead nor galvanized-iron pipes should be used, as in the one case the water would become charged with lead, and in the other with zinc, and thus either lead or zinc poisoning might be brought about from the contamination of an otherwise very pure water.

Drift Deposits.

The nature of these deposits, and the supply and character of the water they contain, are indicated in the table of Geological Formations, classified under the terms Recent and Pleistocene. The lowest-lying Valley-Gravels—which when favourably situated often contain a large quantity of water—seldom exceed 30 feet in thickness. Those at a higher level seldom exceed 20 feet, and contain a much smaller quantity of water, varying considerably according to area and local physical conditions. The thickness of the Plateau Gravels varies from a few feet to about 20, and owing to their elevated and irregular position they usually contain but a small supply of water, as so much escapes by the lips or indentations around the hill-slopes.

The wells consequently being shallow are very liable to surface contamination; they should accordingly be steined with brick-work in cement as far down as practicable or desirable, in order that the more or less polluted surface-water may percolate or filter through a considerable thickness of gravel, loamy sand, etc.; which would tend to oxidate and render innocuous any injurious organic matter taken up by the water in its passage before entering the well. But, equally or still more important is it to keep the drains, cesspools, etc., watertight, as previously mentioned,* so that the natural filtering constituents of these Drift or other deposits should be kept as clean as possible, and free from all noxious material. If these gravels, etc., are already polluted, then by paying proper attention to drainage, they would for the most part, by the frequent passage of rain-water through them, soon become clean again.

In comparing these shallow wells with deep wells, or borings into a water-bearing bed situated beneath or between impermeable strata, it may be mentioned, that such surface-polluted water, "when it penetrates only to shallow wells, still retains a considerable proportion of its polluting organic matter in an unoxidized condition; but when it descends through 100 feet or upwards of porous soil or rock, the exhaustive filtration to which it has been subjected, in passing downwards through so great a thickness of material, and the rapid oxidation of the dissolved organic matters in a porous aërated medium, afford a considerable guarantee that all noxious constituents have been removed, even from such portions of the water as have passed perpendicularly downwards. Still more so must this obviously be the case with the even much larger portion which reaches a well in a more or less horizontal direction, through far greater thicknesses of porous medium." †

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* Introduction, p. 1.

† Rivers Pollution Commission. Sixth Report. 1874. p. 89.

Annual Rainfall of Berkshire.

(*From "Rainfall Tables of the British Islands*, 1866–1890.")

Locality of Observation.	Height above Mean Sea-Level.	Period of Observation.	Maximum Rainfall.	Minimum Rainfall.	Mean Rainfall.
Cookham - - - -	90	1866–90	30·64	19·52	25·99
Farringdon - - -	340	1881–90	35·97	21·05	27·47
Hungerford (Denford Park)	430	1881–90	38·41	22·50	28·87
Long Wittenham - -	170	1866–80	35·12	16·88	28·29
Maidenhead - - -	90	1866-80	34·83	18·49	26·94
Newbury (Greenham) -	260	1866–80	37·33	20·40	29·19
Reading - - - -	154	1866–90	29·32	19·51	25·86
Wallingford (The Castle) -	175	1866–80	31·93	15·48	26·03

List of Geological Survey Works on Berkshire.

Sheets of the Index Map. Scale four miles to one inch.

11. Western part of the county. (W. of Reading.)
12. Eastern part of the county. (E. of Reading.)

Sheets of the Map. Old Series. Scale one inch to a mile.

7. South-western corner. Windsor, Maidenhead, Cookham, Wargrave, Twyford. 1861. Revised to 1872. Drift Edition 1871. By W. Whitaker and C. E. Hawkins.
8. North-western corner. Wokingham, Easthampstead, and Sunninghill. 1862. Revised to 1868. By T. R. Polwhele. Drift Edition 1887. By W. Whitaker, F. J. Bennett, and C. E. Hawkins.
12. Northern part. Hungerford, Inkpen, Kintbury, Newbury, Thatcham, Stratfield, Mortimer, Swallowfield. 1860. By W. T. Aveline, H. W. Bristow [W. Whitaker], and R. Trench.
13. Western and Southern part. Reading, Lambourn, Farringdon, Wantage, Abingdon, Wallingford. 1859. By W. T. Aveline, H. W. Bristow, E. Hull, H. Bauerman, and W. Whitaker.
34. Small part on Eastern side. Shrivenham. 1857. Revised to 1859. By E. Hull.
45 (S.W.). Very small part on South, near South-eastern corner. Wytham, 1859. By E. Hull.

Sheets of the Map. New Series. Scale one inch to a mile.

267. All but the Western part and a narrow strip along the South-eastern part. Newbury, Thatcham, West Woodhay, Inkpen, Kintbury, Hungerford, Lambourn, Compton. 1898. By F. J. Bennett.
268. All South of the Thames, with the exception of a narrow strip along the Southern part of the sheet. Reading, Wokingham, Swallowfield, Stratfield, Mortimer, Aldermaston, Bucklebury, Streatley, Pangbourne. 1898. By J. H. Blake and (S.W. part by) F. J. Bennett.
283. Only a small part near North-western corner. 1898. By F. J. Bennett.

Sheets of the Horizontal Sections. Scale six inches to a mile.

72. No. 2. From Lambourn Downs, Berkshire, on the south. By E. Hull, 1867.
74. From Chobham Ridges, in Surrey, through Virginia Water, Windsor, Stokes Poges, Hedgerley, Beaconsfield, and Ellesborough to Bishopstone in Bucks. By W. Whitaker, 1868.
81. From White Hill, near Kingsclere, in Hampshire, to Pinsley Wood, near Handborough, in Oxfordshire. By H. W. Bristow and E. Hull, 1870.

Memoirs, 8vo.

The Geology of Parts of Oxfordshire and Berkshire. (Sheet 13.) By E. Hull and W. Whitaker. 1861.

The Geology of Parts of Berkshire and Hampshire. (Sheet 12). By H. W. Bristow and W. Whitaker. 1862.

The Geology of Parts of Middlesex, Hertfordshire, Buckinghamshire, Berkshire, and Surrey. (Sheet 7.) By W. Whitaker. 1864. (Included in the Geology of London, etc.)

The Geology of the London Basin. Part I. The Chalk and the Eocene Beds of the Southern and Western Tracts. By W. Whitaker. (Part by H. W. Bristow.) 1872.

The Geology of London and of Part of the Thames Valley. By W. Whitaker.

Vol. I. Descriptive Geology. 1889.
Vol. II. Appendices. Well sections, borings, &c. 1889.

The Jurassic Rocks of Britain. Vol. V. The Middle and Upper Oolitic Rocks of England (Yorkshire excepted). By H. B. Woodward. 1895.

Soils and Subsoils from a Sanitary point of view. By H. B. Woodward. 1897.

The Cretaceous Rocks of Britain. Vol. I. The Gault and Upper Greensand of England. By A. J. Jukes-Browne. 1900.
Vol. II. The Chalk of England. (In preparation.)

The Geology of the Country around Reading. By J. H. Blake. (In preparation.)

WELL SECTIONS IN BERKSHIRE.

[Words, &c., in square brackets, have been added by Mr. W. WHITAKER or myself.]

Abingdon.

Rev. J. C. CLUTTERBUCK, Journ. R. Agric. Soc., ser. 2, vol. i., p. 281.
The water was slightly impregnated with sulphuretted hydrogen and iron-salt.

Kimeridge Clay
Corallian Beds } 60 feet.

Aldermaston.

1. ALDERMASTON WHARF.

The Brewery. 1849 and 1868. (*See* p. 106.)

Communicated by Mr. J. T. STRANGE.

Level of ground about 180 feet above Ordnance Dtaum.

The water rises to a height of 15 feet above the surface and is very pure. Temperature of water, 53 degrees, has never altered. Bored in July 1849, re-bored entirely in 1868, and again in 1894 by MR. EDWARD MARGRETT.

		Thickness.	Depth.
		Feet.	*Feet.*
[Valley Gravel, &c., 34 feet.]	Surface soil, &c.	4	4
	Gravel, &c.	30	34
[Basement-bed of London Clay, 16 feet.]	Sand and shells, with clay-stone [septaria] at 40 feet	16	50
[Reading Beds, 73 feet.]	Blue clay and clouded [mottled] at 40 feet	50	100
	Sand and a spring, with a thin bed of "sulphur ore" (sulphide of iron) at 105 feet	15	115
	Blue clay and sand	3	118
	Sand and [flint] pebbles	5	123
[Upper Chalk.]	Chalk	26	149

2. Mr. C. E. Keyser's. 1896.

Bored and communicated by Mr. Edward Margrett.
Shaft 10 feet, the rest bored, and tubed 33 feet into the Chalk.
Water rose to 6 feet above the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Made ground		4	4
[Valley Drift, 32 feet.]	Gravel	6	10
	Clay	3	13
	Gravel	23	36
[London Clay, 78 feet.]	Blue clay with clay-stone [septaria] and shells, then clay with pyrites and water, followed by loamy and sandy clay with clay-stone [septaria]	78	114
[Reading Beds, 70 feet.]	Mottled red, blue, grey, yellow and green clay, then sand, and sandy clay with shells at base	70	184
[Upper Chalk]	Soft chalk, then chalk with flints	79	263

Aldworth.

1. The Village Well.

Made and communicated by Mr. John Higgs, of Basildon.
Water-level 42 feet from bottom.

Mould and stones	6	370 feet.
Chalk [with flints in upper part]	364	

2. Bower Farm.

Made and communicated by Mr. J Higgs.

Clay-with-flints	11	346 feet.
Chalk [with flints in upper part]	335	

3. Buerhold Hill Farm.

Made and communicated by Mr. J. Higgs.
Water-level 10 feet from bottom.

Gravel	14	140 feet.
Chalk-with-flints	126	

4. Mapleton's Farm.

Made and communicated by Mr. J. Higgs.
Water level 5½ feet from bottom.

Clay-with-flints	9	152 feet.
Chalk-with-flints	143	

F. J. B.

Arborfield.

THE MOLE. Messrs. H. & G. SIMONDS, 1896.

Bored and communicated by Mr. ALFRED CALLAS.
Water-level 25 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	2	2
[London Clay, 189 ft.]	Yellow clay and loam	17	19
	Blue clay	157	176
	Black loam	1	177
	Black and green sand [Basement bed.]	10	187
	Sand, stone, and pebbles	2	189
[Reading Beds]	Yellow sand	6	195

Ascot.

1. RACE COURSE.

About 250 feet above Ordnance Datum.
Made and communicated by Messrs. S. F. BAKER & SON.
Shaft 250 feet, the rest bored.
Supply so small that the well was abandoned.

		Thickness.	Depth.
		Feet.	*Feet.*
Surface soil, loam		3	3
[Lower Bagshot Beds, 65 feet.]	Hard yellow sand and loam	38	41
	Hard grey sand	4	45
	Hard grey sandy clay and pebbles	5	50
	Fine grey sand	9½	59½
	Brown clay	1	60½
	Fine grey sand	7½	68
[London Clay, 349½ feet.]	Brown sandy loam	4½	72½
	Brown shale	2½	75
	Grey sand and decayed timber	1	76
	Light brown clay	9¼	85¼
	Dark clay and metal [pyrites]	3¼	88½
	Sandy clay	18	106½
	Grey sand	6½	113
	Darker sand and clay	4	117
	Clay and shells	103	220
	Shelly blue clay	5	225
	Blue clay	187	412
	Brown sandy clay [basement-bed]	2½	414½
	Fine brown sand [basement-bed]	3	417½
[Reading Beds, 72¾ feet.]	Dark brown mottled clay	3½	421
	Sharp brown sand	5¾	426¼
	Fine sand and stone	8¾	435½
	Light [-coloured] mottled clay	6	441½
	Yellow sand and sandstone	6	447½
	Mottled clay	18	465½
	Sand and pebbles	5¼	470¾
	Light-brown clay	9½	480¼
	Light [-coloured] sandstone and sand	3½	483¾
	Strong black clay	2½	486¼
	[Missing bed? ? flints]	4	490¼
Chalk		220	710¼

An account published by the Rev. A. Irving (*Proc. Geol. Assoc.*, vol. ix., no. 6, p. 417) differs somewhat, giving less details in the top 412 feet, which are as follows therein :—

Soil	2½ feet.
Bagshot sand	115½ „
Blue clay	294 „

The underlying beds are the same as in the above account, except at the bottom of the Reading Beds, which is thus given :—

Strong black clay	4 feet.
Dark brown clay	2½ „

The beds below the Bagshot Sand are not classified however, and I am led to think that too great a thickness has been assigned to that formation.

It is from this account that the depth in the Chalk has been inserted.

A tracing, communicated by Mr. Wm. Menzies, agrees with this, except in making the total depth 707 feet.

W. W.

2. The Village of Ascot, etc., 1878.

The following particulars are taken from Dr. Ballard's Report to the Local Government Board, dated July 10, 1878 ; and which contains geological information from Mr. C. E. Hawkins.

"The geological formation on which the district stands, is the Lower Bagshot Sand, which lies immediately upon the London Clay. In various parts upon the surface there are beds of gravel of a few feet in thickness, and in some places, either upon the surface in patches, or at various depths below the surface, there are layers of a pale yellow sandy clay and occasional seams of nearly pure pipeclay. These clay layers of varying thickness and extent are irregularly dispersed through the sand, together with more or less of a sandy loam. On sinking down through the ground, water is met with abundantly in a 'running sand,' at depths, varying with the elevation of the place, from about 70 to 16 feet. It is found impracticable to sink wells many feet in this 'running sand,' and, when the attempt has been made, the wells have quickly silted up and sand has been pumped up with the water. It is into sand of this character that nearly all the wells which furnish the water-supply of the district are sunk."

"Table showing the Depths of various Wells at Ascot, the Level of the Water in them approximately, and the Elevation of the Surface of the Ground above Ordnance Datum in respect of each."

	Approximate elevation of surface of ground above Ordnance Datum in feet.	Distance from the surface of ground to the water in feet.	Depths of water, in feet.	Total depth of well in water.
1. Well at Ascot Hotel	307	70 0	4 0	74 0
1*a*. Another well at Ascot Hotel	307	66 0	4 0	70 0
2. Garden-well at "Heatherfield"	272	42 6	3 6	46 0
3. House well at "Heatherfield"	307	76 6	3 6	80 0
4. Well at Ascot grand stand	300	71 0	3 0	74 0
4*a*. Trial boring on racecourse	260	45 0 ?	—	—
5. Well at Gothic House	280	44 10	5 2	50 0
6. Well at Ascot Wood House lodge	278	39 2	2 10	42 0
7. Well at Ascot Wood cottage	275	46 6	3 8	50 2

TABLE showing the Depths of various Wells at Ascot, &c.—*continued.*

	Approximate elevation of surface of ground above Ordnance Datum in feet.	Distance from the surface of ground to the water in feet.	Depths of water, in feet.	Total depth of well in water.
8. Well at Ascot Wood House (new well)	273	49 10	3 2	52 0
9. Well at new cottage opposite Dunham's, Racecourse Lane	272	29 0	2 6	31 6
10. Well at Dunham's, Racecourse Lane	270	25 0	3 0	28 0
11. Well at Hermitage (old well)	270	33 2	2 10	36 0
12. Well at Post Office, Ascot (Longhurst's)	270	28 5	6 3	34 8
13. Well at The Hermitage (new well)	273	43 0	2 6	45 6
14. Well at Ashby's, New Mile Lane	265	27 0	14 0	41 0
15. Well at Holmes', New Mile Lane	262	28 0	9 3	37 3
16. Well at Cowies', New Mile Lane	260	27 2	8 10	36 0
17. Well at The Wilderness (superficial well)	260	6 0	6 0	12 0
18. Well at Sunninghill House School, Ascot (house-well)	260	38 7	4 1	42 8
19. Well at Sunninghill House School, Ascot (garden-well)	225	17 6	7 6	25 0
20. Well at Mr. W. Critcher's, Keep's Corner	230	3 6	9 0	12 6
21. Well at King's (between last and Brick-Kiln Farm)	240	16 0	5 0	21 0
22. Well at Brick-Kiln Farm. (*See* p. 106)	240	16 6	6 0	22 6

Ashampstead.

1 to 7. Communicated by Mr. JOHN HIGGS to Mr. F. J. BENNETT.

1. THE VILLAGE WELL.

473 feet above Ordnance Datum. Water-level 3½ feet from bottom.

Clay-with-flints	6	232 feet.
Upper Chalk	226	

2. ALBURYS FARM.

438 feet above Ordnance Datum. Water-level 6½ feet from bottom.

Clay-with-flints	8	217 feet.
Upper Chalk	209	

3. CHILDS' COURT FARM.

330 feet above Ordnance Datum. Water-level 13 feet from bottom.

Clay-with-flints	14	68 feet.
Upper Chalk	54	

4. Hartridge Farm.

429 feet above Ordnance Datum. Water-level 8 feet from bottom

Loam and flints [Clay with flints]	8	220 feet
Upper Chalk	212	

5. Keeper's House on the Common.

Clay and gravel [Clay with flints]	19	153 feet.
Upper Chalk	134	

6. Blacksmith's on the Common.

Gravel	17	155 feet.
Upper Chalk	138	

7. Palmer's Cottages.

Water-level 3 feet from bottom.

Clay-with-flints	8	136 feet.
Upper Chalk	128	

Basildon.

1. Blandy's Farm.

1 to 22. Communicated by Mr. J. Higgs to Mr. F. J. Bennett.

400 feet above Ordnance Datum. Water-level 4½ feet from bottom.

Gravel and clay [Clay-with-flints]	15	223 feet.
Upper Chalk [Chalk-with-flints]	208	

2. Hook End Farm.

300 feet above Ordnance Datum. Water-level 6 feet from bottom.

Clay and flints [Clay-with-flints]	8	136 feet.
[Upper Chalk] chalk and flints	128	

3. Hook End Lane Farm.

290 feet above Ordnance Datum. Water-level 3 feet from bottom.

Mould and stones [valley gravel]	22	34 feet.
Chalk-with-flints	12	

4. Tomb Farm.

298 feet above Ordnance Datum. Water-level 3½ feet from bottom.

Mould and stones [valley gravel]	14	101 feet.
Chalk-with-flints [rock near bottom]	87	

5. Home Farm.

Water-level 8 feet from bottom.

Clay and flints	7	176 feet.
Chalk	169	

6. Park Farm.

Water-level 4 feet from bottom.

Loam and flints	9	43 feet.
Chalk	34	

7. Basildon House.

Water 7 feet from bottom.

Gravel	17	147 feet.
Chalk	130	

8. The Stables of Basildon House.

Water 5 feet from bottom.

Soil, "Mould and stones"	10	70 feet.
Chalk	60	

9. Higgs Cottage.

Water 3 feet from bottom.

Brown loam and stones	32	52 feet.
Chalk	20	

10. Ivy Cottage.

Water 5½ feet from bottom.

Brown loam and stones	16	40 feet
Chalk	24	

11. Stone House.

Water 5 feet from bottom.

Brown loam and stones	18	42 feet.
Chalk	24	

12. The School.

Water 6 feet from bottom.

Brown loam and stones	15	63 feet.
Chalk	48	

13. Alburys Cottage.

Water 3 feet from bottom.

Brown loam and stones	29	52 feet.
Chalk	23	

14. Duckets Well.

Water 3 feet from bottom.

Brown loam and stones	17	48 feet.
Chalk	31	

15. Robinson's House.

Water 4 feet from bottom.

Brown loam and stones	20	53 feet.
Chalk	33	

16. St. Bartholomew's Church or Basildon Farm, Yard well, and Rectory.

These three wells are sunk through valley gravel, and vary in depth from 11 to 13 feet, with 2½ to 3½ feet of water from bottom.

17. White House.

Water 4 feet from bottom.

Brown loam and stones - - - -	16	60 feet.
Chalk - - - - - - - -	44	

18. Windebank's Cottage.

Water 3½ feet from bottom.

Brown loam and stones - - - -	16	55 feet.
Chalk - - - - - - - -	38	

19. Barbers Cottage.

Water 3 feet from bottom.

Brown loam and stones - - - -	11	57 feet.
Chalk - - - - - - - -	46	

20. Crown Inn.

Water 4 feet from bottom.

Brown loam and stones - - - -	20	55 feet.
Chalk - - - - - - - -	35	

21. Bossom's Cottage.

Water 5 feet from bottom.

Brown loam and stones - - - -	6	73½ feet.
Chalk - - - - - - - -	67½	

22. The Grotto.

Water 2½ feet from bottom.

Soil, &c. - - - - - - - -	6	22½ feet.
Chalk - - - - - - - -	16½	

Basildon (Upper).

1. House Barn. 1888.

1 to 7. Communicated by Mr. J. Higgs to Mr. F. J. Bennett.

399 feet above Ordnance Datum. Water level 9 feet from bottom.

Clay-with-flints - - - - - -	14	240 feet.
Chalk [Upper] - - - - - -	226	

2. Near Independent Chapel. 1888.

Water level 4 feet from bottom.

Loam and flints [Clay-with-flints] - -	15	231 feet.
Chalk [Upper] - - - - - -	216	

3. Kiln Farm. 1888.

430 feet above Ordnance Datum. Water-level 7 feet from bottom.

[Reading Beds] sand and clay - - -	28	261 feet.
Chalk [Upper] - - - - - -	233	

4. Knoll Farm, near Henwood Copse. 1888.

Water level 4½ feet from bottom.

Clay and gravel [Clay-with-flints] - -	16	262 feet.
Chalk [Upper] - - - - - -	246	

5. "Red Lion" Inn. 1888.

370 feet above Ordnance Datum. Water level 10 feet from bottom.

Clay and flints [Clay-with-flints] - -	10	202 feet.
Chalk [Upper] - - - - - -	192	

6. The School. 1888.

460 feet above Ordnance Datum. Water level 10 feet from bottom.

[Reading beds] sand and clay - - -	32	281 feet.
Chalk [Upper] - - - - - -	249	

7. Woodgreen Farm. 1888.

400 feet above Ordnance Datum. Water level 3½ feet from bottom.

Loam and flints [Clay-with-flints] - -	15	233 feet.
Chalk [Upper] - - - - -	218	

Bearwood.

Communicated by Messrs. Easton & Amos (Memoirs, vol. iv. p. 423.).

		Thickness.	Depth.
		Feet.	*Feet.*
? Soil, &c.	- - - - - - -	8	8
[London Clay, 256 feet.]	London clay - - - -	252	260
	[Basement-bed ?] Sandstone -	3	263
	[Basement-bed ?] Green sand -	1	264
[Woolwich and Reading Beds, 86 feet !]	Brown clay - - - -	11	275
	Light sand - - - -	10	285
	Brown mottled clay - - -	5	290
	Dark sand - - - -	4	294
	Brown sand - - - -	1	295
	Dark hard clay - - -	5	300
	Red mottled clay - - -	1	301
	Dark sand - - - -	3	304
	Red mottled sand - - -	1	305
	Dark red sand - - - -	3	308
	Light clay or marl - - -	1	309
	Red mottled clay - - -	2	311
	Light sand - - - -	1	312
	Bluish sand - - - -	3	315
	Dark black sand - - -	4	319
	Dark green sand - - -	15	334
	Dark brown sand - - -	4	338
	Dark sand - - - -	12	350
Chalk and flints	- - - - - -	15	365

[According to letters from Mr. J. Walter, the original well (a failure) had a shaft of 150 feet, and a bore-hole of 400 feet deep, the Chalk being pierced to a depth of 200 feet; many oyster-shells and green-coated flints were found.] W.W.

Beedon.

At Parsonage.

Sunk and communicated by Mr. Church, of Chieveley.

4 feet of water.

Clay	5	231 feet.
Chalk	226	

F. J.B.

Beedon Hill.

Near Kiln.

Sunk and communicated by Mr. Church.

[Reading Beds] sand and clay	15	310 feet.
Chalk [Upper]	295	

F. J .B.

Beenham.

1. Well west of Beenham Farm, to supply cottages, 13 feet deep through valley gravel. Surface of ground 195 feet above Ordnance Datum. I was informed on the spot, that although there were only 2 feet of water at the bottom of the well in summer, it rises in winter to within 3 feet of the top.

2. There is a well situated 230 yards S.S.W. of the above, on the north side of the road ; it is 13 feet deep through valley gravel, and pebbles were found at the bottom, which latter is probably in the basement-bed of the London Clay.

3. Another well occurs at Field Barn, about three-quarters of a mile N.E. of Beenham Farm. It was 16 feet in depth in 1891 and contained 4 feet of water, but has since been deepened 5 feet. The upper part was sunk through valley gravel, a good section of which was exposed in the ditch alongside the road N. of Field Barn.

4. Near "Bell" Inn.

Sunk and communicated by Mr. Piper.

[London Clay.] Brown clay	10	35 feet.
Black clay and shells	29	

5. Another Well near the Above.

Sunk and communicated by Mr. Piper.

[London Clay.] Brown clay	7	36 feet.
Black clay and shells	25	

6. The Old Kiln.

Sunk and communicated by Mr. Piper.

Gravel	2	
[London Clay.] Brown clay	20	38 feet.
Dark clay and rock	16	

4 to 6. F. J. B.

Bourton.

The Village. 1899.

Communicated by Mr. George Winship, Engineer and Surveyor to the Corporation of Abingdon, etc.

		Thickness.	Depth.
		Feet.	*Feet.*
[Kimeridge]	Clay	203	203
[Corallian Beds]	Rock and clay in layers	8	211
	Sand and clay, almost like an admixture, and no water	28	239
	Rock from which water rises and brings up sand	26	265

Bracknell.

Hawthorne Hill. 1880.

Bored and communicated by Messrs. Thomas Tilley & Sons.

Water-level 80 feet from surface.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
Old well		40	0	40	0
(London Clay)	Blue Clay	97	0	137	0
	Grey sand and clay [Base-ment-bed.]	2	0	139	0
	Green sand and oyster shells	1	8	140	8
[Reading Beds 78 feet]	Coloured clay [mottled]	2	4	143	0
	Sandy clay	2	0	145	0
	Coloured clay [mottled]	7	0	152	0
	Brown sandy clay	3	0	155	0
	Green sandy clay	3	0	158	0
	Brown sandy clay	2	0	160	0
	Stone	2	0	162	0
	Coloured clay [mottled]	8	0	170	0
	Stone	0	6	170	6
	Coloured clay [mottled]	12	6	183	0
	Brown sandy clay	2	0	185	0
	Brown sand	1	0	186	0
	Coloured clays [mottled]	23	0	209	0
	Brown sand	1	0	210	0
	Green clay	5	0	215	0
	Green sand and oyster shells [Bottom-bed]	1	0	216	0
	Light sand	2	0	218	0
[Upper]	Chalk	227	0	445	0

Bradfield.

1. Bottom House Farm.

1 to 15. Communicated by Mr. John Higgs to Mr. F. J. Bennett.

Water-level 4 feet from bottom.

Mould and stones [valley gravel]	7	37 feet.
Upper Chalk] chalk-with-flints	30	

2. Hewen's Wood.

Water-level 7 feet from bottom.

[Reading beds] clay	42	107 feet.
[Upper Chalk] chalk-with-flints	65	

3. Barnelm Farm.

Water-level 4 feet from bottom.

Clay and gravel - - - - - - - 15 feet.

4. The College Well.

Gravel	6	21½ feet.
Upper Chalk	15½	

5. The Rectory.

Water-level 4 feet from bottom.

Gravel	10	41 feet.
[Upper Chalk] chalk-with-flints	31	

6. The Malthouse.

Water-level 20 feet from bottom.

Clay - - - - - - - - - - 30 feet.

7. St. Andrews.

Water-level 12 feet from bottom.

Gravel - - - - - - - - - 14 feet.

8. Bournfield Farm.

Water-level 6 feet from bottom.

Clay - - - - - - - - - 6 feet.

9. The Union.

Water-level 16 feet from bottom.

Gravel	8	42 feet.
[London Clay] dark mild clay to green sand [Basement-bed]	34	

10. Cripp's Farm.

Water-level 14 feet from bottom.

Gravel	6	26 feet.
[London Clay] dark mild clay	20	

11. Pither's Farm.

Water level 13 feet from bottom.

Gravel	6	18 feet.
[London Clay] clay	12	

12. Berry's Farm.

Gravel	5	14 feet
Clay	9	

13. Bradfield Cottage.

Water level 10 feet from bottom.

Gravel	6	26 feet.
[London Clay] clay	20	

14. The Old House.

Gravel	7	21 feet.
[London Clay] clay	14	

15. Greathouse Cottages.

[Reading Beds] clay	30	149 feet.
[Upper Chalk] chalk-with-flints	119	

16. Bradfield Hall. 1883.

Bored and communicated by Mr. Alfred Callas.

Water-level 58 feet from surface.

——	Thickness.	Depth.
	Ft. *in.*	*Ft.* *in.*
[Reading Beds, 57½ feet.] Mottled clay	36 0	36 0
Mottled sands	13 0	49 0
Blue clay with shells and glassy substance. [Selenite.]	7 0	56 0
Flints	1 6	57 6
[Upper Chalk] chalk-with-flints	34 6	92 0

17. Bradfield Hall.

Sunk by Mr. Piper, of Bucklebury, and communicated to Mr. F. J. Bennett.

[Reading Beds] green sandy clay	10	30 feet.
[Upper Chalk] chalk	20	

18. Southend, new Cottages N. of Cripps' Farm.

Soil	4	27 feet
Loose gravel	20	
Sand	3	

19. Near the Above.

[?Lower Bagshot and London Clay.]	Soil and gravel	3	48 fee
	Brown Loam	19	
	Dark clay	26	

20. "Queen's Head."

[London Clay.]	Gravel	15	39 feet.
	Brown clay	4	
	Blue clay and shells	20	

21. Russell Farm.

Sunk and communicated by Mr. J. Higgs.

[Reading Beds]	clay	38	107 feet.
[Upper Chalk]	chalk	69	

22. At House one mile and a half from the "Blade Bone."

Brown clay	26 feet.

23. Close by the Above.

Gravel	3	27 feet.
Fine gravel	18	
Hard blue clay	6	

24. Tutt's Clump.

Sunk and communicated by Mr. J. Higgs, of Upper Basildon.

Water-level 13 feet from bottom.

Gravel	7	14 feet.
Clay	7	

25. Woodisons Cottages, quarter of a mile E. of Tutt's Clump.

From information obtained by Mr. Higgs.

Water-level 68 feet from bottom.

Gravel	8	71 feet.
[London Clay and Reading Beds] clay	63	

26. New Inn, quarter of a mile S. of Bradfield Hall.

Sunk and communicated by Mr. J. Higgs.

Water-level 5 feet from bottom.

Gravel	7	89 feet.
[London Clay and Reading Beds] clay	82	

F. J. B.

27 Junior School (Bradfield College). 1898.

Bored and communicated by Mr. Alfred Callas.

Tubed 85 feet with 5-inch tube.

Water-level 85 feet from surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Soil	$2\frac{1}{2}$	$2\frac{1}{2}$
[Reading Beds, 75½ feet] Sand and loam	$4\frac{1}{2}$	7
[Reading Beds, 75½ feet] Mottled clay	71	78
[Upper] Chalk and flints	$122\frac{1}{2}$	$200\frac{1}{2}$

28. Bradfield College. 1899.

Bored and communicated by Messrs. Callas, Sons, & May.
Tubed 60 feet with 6-inch tube, then 135 feet with 5-inch tube.
Water-level 127½ feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil	Mould and gravel	2	2
[Plateau]	Gravel	10	12
[London Clay, 50 feet.]	Black clay	28	40
	Black sand and shells and water	20	60
	Pebble-bed [flints]	2	62
[Reading Beds, 68 feet.]	Mottled clay	35	97
	Mottled sand and water	28	125
	Dark-blue clay	4	129
	Pebbles	1	130
Chalk and flints		70	200

29. New House. Miss Connop's. 1899.

Bored and communicated by Messrs. Callas, Sons, & May.
Tubed 95 feet with 5-inch tube.
Water rose to within 106 feet of the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 22 feet.]	Clay and loam	6	6
	Sand with a little water [basement bed]	16	22
[Reading Beds, 74 feet.]	Mottled clay	38	60
	Mottled sand	15	75
	Blue clay and loam	20	95
	Bed of flints	1	96
Chalk		62	158

Brightwell.

Test-boring for the Crowmarsh and Wallingford Joint Hospital Board.
Bored and communicated by Mr. Edward Margrett.
Water-level 9 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[Upper Greensand, 65 feet.]	Light grey rock (seam of water at 20 feet)	21	21
	Dark-blue rock (seam of water at 42 feet)	21	42
	Soft grey rock with a little sand	23	65
[Gault]	Clay	5	70

Brimpton.

1. Dug and communicated by Mr. S. Joyce.

		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	2	2
	Clay and gravel	6	8
[Reading Beds]	Mottled crimson and grey clay	26	34
	Brown sand, green at bottom	12	46
[Upper Chalk]	Chalk	51	97

[The above given from memory by the well-sinker, but he thought the Reading Beds might be over 50 feet in thickness.—J. H. B.]

2. Butters Lands.—Mr. R. Benyon, 1894.

Bored and communicated by Mr. Alfred Callas.

Water rises to within 72 feet of the surface.

Dug well, 95 feet deep, the rest bored.

Nearly all London Clay, but finished off in Reading Beds, 220 feet

3. Holdaway Farm (near the Church).

Sunk and commuuicated by Mr. Piper.

[Lower Bagshot and London Clay]	Gravel	3	30 feet.
	Sand	3	
	Dark clay and shells	24	

F. J. B.

Bucklebury.

1 to 10. Sunk by Mr. Piper, of Bucklebury, and communicated to Mr. F. J. Bennett.

1. "Three Crowns" Inn.

[Plateau Gravel]	Gravel	5	25 feet.
[Lower Bagshot]	Loam	14	
	Sand and grit	6	

2. Bucklebury Common (¼ mile north of the "Three Crowns" Inn, and near the Methodist Chapel.)

[Lower Bagshot]	Light brown clay	4	24 feet.
	Dark clay	20	

3. New Cemetery.

[Plateau Gravel]	Gravel	4	20 feet.
[Lower Bagshot]	Sandy loam	12	
	Sand	4	

4. Sadgrove Farm.

[London clay]	Light brown clay	10	60 feet.
	Dark clay	50	

5. "Blade Bone" Inn, Chapel Row.

[Lower Bagshot (?) and London Clay]	Brown clay	20	34 feet.
	Dark clay and rock	14	

6. Well (¼ mile N. of the "Blade Bone").

[Lower Bagshot (?) and [London Clay]	Stiff brown clay	20	35 feet.
	Hard dark clay	12	
	Bed of black sand	3	

7. Another Well (near the above).

[London Clay]	Stiff brown clay	20	31 feet.
	Hard dark clay and rock, with pearly shells and oyster shells	11	

8. New Cottages in Briffs Lane (one mile N. of Winchcombe Farm).

[Reading Beds.]	Clay and gravel	25	29 feet.
Chalk [Upper]		4	

9. Foundry.

Hard brown clay - - - - - - 25 feet.

10. Hopgood Farm.

[Lower Bagshot.] Loam - - - - - 35 feet.

11. Hillyard Farm.

Dug and communicated by Mr. Samuel Joyce.

Water-level 16 feet from surface. Water has very unpleasant odour and is not fit for drinking purposes.

———	Thickness.	Depth.
	Feet.	*Feet.*
Soil - - - - - - - - - -	1	1
Mottled clay - - - - - - - -	16	17
Layer of pebbles - - - - - - -	1	18
Greenish sand and small shells - - -	17½	35½
Blue clay (reached).		

12. At Common Hill.

Dug and communicated by Mr. Samuel Joyce.

———	Thickness.	Depth.
	Feet.	*Feet.*
[Plateau] Gravel - - - - - -	6	6
[Lower Bagshot] Sand, etc. - - - - -	28	34
[London Clay] Blue clay, with rock-stone [septaria?] 5 inches at 35 feet -	16	50

Burghfield.

1. The Hollies. 1896.

Bored and communicated by Mr. Alfred Callas.

Water-level 154 feet from the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil		3	3
Drift	Gravel	2	5
[London Clay, 195 feet.]	Yellow clay and loam	28	28
	Blue clay	162	190
	Black sand and shells [Basement-bed]	10	200
[Reading Beds, 11 feet.]	Very fine sand	9	209
	Yellow sand	2	211

2. King's Hill, seven-eighths of a mile N.W. of the Church. 1898.

About 207 feet above Ordnance Datum.

Bored by Mr. Alfred Callas, of Reading, details communicated by Mr. H. G. Willink and Mr. Callas.

Water rose to within 62 feet of the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 72 feet.]	Clay [Septaria at 35 feet and 45]	61	61
	Black sand and shells (with pebble-bed at 72) [Basement-bed]	11	72
[Reading Beds, 76 feet.]	Brown sand	8	80
	Grey clay streaked with red	10	90
	Green do. do.	4	94
	Red streaky mottled clay	3	97
	Light brown and grey mottled clay	2	99
	Dark stiff grey clay	3	102
	Red mottled clay	2	104
	Mottled grey and yellow sandy clay	10	114
	Mottled clay	5	119
	Crumbly light grey sandy clay	9	128
	Crumbly blue do. do.	2	130
	Solid blue clay	1	131
	Mottled clay and sand	4	135
	Bluish-green sand	1	136
	Grey clay and sand	3	139
	Grey sand	2	141
	Grey clay	3	144
	Sandy clay and sand with shells at 145 [Bottom-bed]	4	148
[Upper Chalk]	Chalk	20	168

3. The Poplars. Mr. Ernest Chance. 1898.

300 feet above Ordnance Datum.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water rose to within 150 feet of the surface.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Plateau Gravel, etc., 5 feet.]	Loam	1 6	1 6
	Red clay and gravel	3 6	5 0
[London Clay, 205 feet.]	Red clay	12 6	17 6
	Blue clay	5 0	22 6
	Septarium	0 6	23 0
	Blue clay	78 0	101 0
	Clay and pebbles	0 6	101 6
	Sandy clay (shells at 194 feet)	108 6	210 0
[Reading Beds, 70 feet.]	Mottled clay	2 0	212 0
	Blue clay and grey sand	2 0	214 0
	Mottled clay and grey sand	34 0	248 0
	Mottled clay	11 0	259 0
	Grey sand and mottled clay	7 6	266 6
	Mottled clay	7 6	274 0
	Green sand, clay and shells [Bottom Bed]	6 0	280 0
[Upper Chalk.]	Chalk-with-flints	94 0	374 0

No appreciable supply of water stated to have been reached until the last 24 feet.

The shells met with at 194 feet probably occur in the upper part of the Basement-bed of the London Clay,—the Basement-bed being probably from 10 to 14 feet thick. J. H. B.

4. Hosehill Farm.

Boring made by Mr. Edward Margrett (of Reading).

Information obtained on the spot.

Water-level (in 6-inch iron tubes), 6 feet 3 inches below surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Drift, 11 feet	Soil	2½	2½
	Brown loam clay with a few flints	4½	7
	Coarse subangular brown flint-gravel	4	11
[Reading Beds, 50½ feet.]	Mottled blue, green, and brown loamy sand	10	21
	Ash-coloured sand	34	55
	Do. do. with some small hard marly pebbles and irregular-shaped small flints	4	59
	Greenish sandy clay with blackish irregular-shaped pebbly flints, mostly small	2½	61½
Chalk	[Touched.]		

5. Farm north of the above.

Boring made and communicated by Mr. E. Margrett.

		Thickness.	Depth.
		Feet.	*Feet.*
Drift, 13 feet	Gravel	13	13
Reading Beds, 39 feet.]	Mottled clay	21	34
	Blue clay	14	48
	Coarse grey sand	4	52
Chalk	[Touched.]		

Burnthill.

1. Burnthill Common. Dr. Breach's.

Sunk and communicated by Mr. John Higgs.

[Reading Beds]	Sand and Clay	50	184 feet
[Upper Chalk]	Chalk-with-flints	134	

2. One mile E. of Burnt Hill Common.

Sunk and communicated by Mr. Piper, of Bucklebury.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds]	Yellow clay	10	10
	Sand	30	40
	Green sand	3	43
[Upper Chalk]	Chalk	150	193

F. J. B.

3. Stroud's Farm, E. of Burnt Hill.

Sunk and communicated by Mr. J. Higgs.

Water-level 6½ feet from bottom.

	Clay, with flints	7	146 feet.
[Upper Chalk]	Chalk with flints	139	

Challow (East).

Challow Marsh Farm (nearly ½ mile S. of the Railway). 1896.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water-level 21¾ feet down. Yield 450 gallons an hour.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
Soil		2	0	2	0
[Gault, 31 feet]	Blue Clay	30	0	32	0
	Sand	1	0	33	0
[Kimeridge Clay, 195½ feet.]	Stone	0	6	33	6
	Clay and Stone	26	6	60	0
	Clay	44	0	104	0
	Sand and Shells	6	0	110	0
	Clay and Shells, with rock at 203 to 204	116	0	226	0
	Sandy clay and shells	2	6	228	6
[Corallian, 23½ feet.]	Sandstone	4	1	232	7
	Sandy clay	0	5	233	0
	Rock	1	3	234	3
	Sandy clay, 3 inches of rock at base	2	0	236	3
	Sand	0	9	237	0
	Rock (some in thin bands)	12	6	249	6
	Sandy clay, with 6 inches of rock at the base	2	6	252	0

W. W.

Chieveley.

1. Near Mr. Piggot's.

Sunk and communicated by Mr. Church, of Chieveley.

Water-level varies from 4 to 16 feet from bottom.

Reading Beds] clay	15	109 feet.
Chalk (thin hard bed at 60 feet)	91	

2. At Schools. 2 wells.

Sunk and communicated by Mr. Church.

No. 1. Clay	20	106 feet.
Chalk	89	
No. 2. Clay	10	105 feet.
Chalk	95	

1. & 2. F. J. B

Cholsey.

1. Westfield Nursery. Messrs. Duck & Sons.

Made and communicated by Mr. Edward Margrett.
Shaft 40 feet, the rest bored.
Water-level 130 feet from surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Chalk	40	40
Pasty chalk	30	70
Chalk and flints	27	97
Clay	3	100
Soft brown chalk, then chalk and flints	70	170

2. Near Railway Station.

Dug and communicated by Mr. Samuel Joyce.

[Lower Chalk] Marly chalk - - - - - 9
[Upper Greensand] Running sands with some very small shells - - - - - 9 } 18 feet.

Clapton.

Clapton Farm, S. of Wickham.

Sunk and communicated by Mr. Ravenor, of Newbury.
Water-level varies from 5 to 15 feet down.
Chalk [hard bed, "chalk-rock" at bottom] - 150 feet.

F. J. B.

Clewer Green.

1. Captain Winterbottom's.

From Mr. Trench's Note-Book (Memoirs, vol. iv., p. 423, and Geol. London, vol. ii., p. 3).
Sunk for 42 feet, the rest bored.
Water rose to within 35 feet of the surface.

	Thickness.	Depth.
	Feet.	*Feet.*
[Valley Drift, 8 feet.] Yellow clay [brick-earth]	5	5
[Valley Drift, 8 feet.] Gravel	3	8
[London Clay, 192 feet.] Yellow clay	5	13
[London Clay, 192 feet.] Blue clay	137	150
[London Clay, 192 feet.] Coloured clay, with veins of sand *	50	200
[Reading Beds, 70 feet.] Coloured [mottled] clay, with veins of sand	4	204
[Reading Beds, 70 feet.] Coloured [mottled] clay	36	240
[Reading Beds, 70 feet.] Sand	1	241
[Reading Beds, 70 feet.] Brown clay	29	270
Upper Chalk [chalk with flints]	66	336

* [Part of this bed may belong to the Reading Beds.]

W. W.

2. Wycombe Cottage.

From Mr. Trench's Note-book. (Memoirs, vol. iv., p. 424, and Geol. London, vol. ii., p. 3.).

Sunk 20 feet, the rest bored.†

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay]	Blue clay	86	86
[Reading Beds, 83 feet?]	Black sand [probably basement-bed of London Clay]	4	90
	Coloured [mottled] clay	15	105
	Green sand and clay	2	107
	Brown and coloured [mottled] sand and clay	32	139
	Sand	3	142
	Brown clay	8	150
	Coloured [mottled] clay	14	164
	Green clay	5	169
Chalk		97	266

† [Perhaps these 20 feet are not included in the section, in which case the depth would be 20 feet more].

W. W.

Compton.

No. 1 at Parsonage. No. 2 at Mr. Brown's Windmill.

Sunk and communicated by Mr. Church.

No. 1.	Clay	4	28 feet.
	Chalk	24	
No. 2.	Sand and clay	17	100 feet.
	Chalk	83	

F. J. B.

Curridge.

Sunk and communicated by Mr. Church, of Chieveley.

1. Mr. Bellhouse.

[Reading Beds]	sand and clay	16	108 feet.
Chalk		92	

2. Parsonage at Common.

[Reading Beds]	sand and loam	31	107 feet.
Chalk		76	

3. School.

[Reading Beds]	sand and loam	20	90 feet.
Chalk		70	

F. J. B.

Denchworth.

1. South Denchworth Farm (in village nearly ¼-mile N.N.E. of St. James's Church). 1899.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water-level 28½ feet down. Yield 500 gallons an hour.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
Soil		3 0	3 0
[Kimeridge Clay, 142½ ft.]	Yellow clay	3 0	6 0
	Blue clay	19 0	25 0
	Sandy clay and stone	1 0	26 0
	Blue clay	40 6	66 6
	Stone	1 3	67 9
	Blue clay	51 9	119 6
	Rock	1 9	121 3
	Blue clay	24 3	145 6
[Corallian 23½ ft.]	Rock, with sand at 148 to 148¾ ft. and at 153⅔ to 154 ft.	11 3	156 9
	Sandy clay	1 6	158 3
	Rock, with hard sand at 159 ft. 7 in. to 160 ft. 4 in., and sand at 161 ft. 7 in. to 162 ft. 10 in.	6 7	164 10
	Sand	3 2	168 0

W. W.

2. Upper Circourt Farm (½-mile S.S.W. of St. James's Church). 1899.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water-level 29 feet down. Yield 500 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil		1½	1½
[? Gault]	Coloured [? mottled] clay and stone	7½	9
[Kimeridge Clay, 140 ft.]	Blue clay and shells	63	72
	Rock	1½	73½
	Blue clay	19	92½
	Rock	1	93½
	Blue clay and shells, with rock at 124 to 125	55½	149
[Corallian 18 ft.]	Rock	1½	150½
	Loamy sand	1	151½
	Rock	4	155½
	Sandy clay and rock	8	163½
	Rock	3½	167

W. W.

Didcot.

"Prince of Wales" Hotel. (Opposite Railway-station.) 1880.

From information supplied by Mr. Speller and Messrs. S. F. Baker & Son to Messrs. W. Topley and A. J. Jukes-Browne.

Dug-well 25 feet, the rest bored.

Water-level 35 feet 8 inches from surface. Water brackish, and supply abandoned.

	Thickness.		Depth.	
	Ft.	*in.*	*Ft.*	*in.*
Dug-well	25	0	25	0
[Gault] All blue clay	176	0	201	0
[Lower Greensand] Hard rock (specimen of clayey coarse green sand and stones)	0	8	201	8

Messrs. S. F. Baker & Son, in a letter to Mr. A. J. Jukes-Browne dated Nov. 27th, 1886, state "the boring at Didcot . . . . was not one of our works, but we tested the water-supply from same and also passed the boring-tools down to ascertain the depth, which proved to be 201 feet 8 inches; there was 166 feet of water standing in bore; this was decidedly brackish and not fit for drinking; this after a few days' pumping became much better, but . . . . the work was abandoned."

East Hendred.

Orchard House. Mr. F. W. Phillips.

Made and communicated by Mr. Edward Margrett.

Shaft 12 feet, the rest bored. About 297 feet above Ordnance Datum.

Water-level 24 feet from surface.

[Upper Greensand.]	Cherty rock and sand	12	62 feet.
	Grey rock with a little glauconitic sand	50	

East Woodhay.

Sunk and communicated by Mr. Ravenor, of Newbury.

1. Hollington House.

[Bagshot] Sand - - - - - - - - 20 ft.

2. Harwood Lodge.

[Bagshot] Sand - - - - - - - - 20 ft.

F. J. B.

Elcot.

Elcot Park.

Sunk and communicated by Mr. Ravenor.

Chalk - - - - - - - - - - 250 ft.

F. J. B.

Enborne.

Parsonage.

Sunk and communicated by Mr. Church, of Chieveley.

Clay [? London Clay] - - - - - - 26 ft.

F. J. B.

Englefield.

1. Mr. Benyon's.

Communicated by Mr. William Rhind.
Site of Well in Timber Yard.
Water rises to within 16 feet of the surface at about the rate of 16 gallons per minute.

		Thickness.	Depth.
		Feet.	*Feet.*
[Valley]	Gravel	13	13
[Upper Chalk]	Chalk (hard and dry)	40	53
	„ (soft)	82½	135½

2. Tube Wells in Village.

Mr. W. Rhind (in a letter dated January 21st 1889, written by Mr. Benyon's request) states there are several tube-wells in the village about 50 feet deep. "The first water at about 10 to 13 feet from the surface is found in the gravel, then we drive through the dry chalk for a distance of 30 to 37 feet, when we find a water-bearing stratum; the water rises from this depth to within 11 feet of the surface in some places, and in others to about 12, 14 and 15 feet. This water has been analyzed, and it is a very pure and beautiful water."

Faringdon.

1. Eagle Brewery. 1874 (?)

De Rance, Rep. Brit. Assoc. for 1878, p. 414, and Mr. W. B. Kinsey, *Ibid.*, 1879, p. 159.
Water rose to within 13 feet of the surface, but was reduced by pumping to 30 feet.
Supply 12,700 gallons per day of 11 hours, from a 3-inch bore.
Sand has blown up the pipe to 77 feet from the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
? Made ground	Grit and stone	7½	7½
	Dark grey sandy clay with bits of stone.	4	11½
[? Coral Rag and Coralline Oolite.]	(1) Rock, loose for 1 foot, hard for 2 feet.	3	14½
	(2) Oolitic rock	7½	22
Lower Calcareous Grit.	Grey clayey sand, firm	9½	31½
	Grey sand, loose	9	40½
	Grey clayey sand, firm	11	51½
	Oolitic rock and clayey rock	2½	54
	Dark grey clay with a little sand	2	56
	Grey clayey sand, firm	8	64
	Rock (limestone)	6	70
	(3) Light grey sharp sand	3	73
? Oxford clay	Grey sandy clay	13	86
	Grey sand with pyrites	5	91
	(4) Grey sandy clay	4	95
	„ „ „	5	100
	„ „ „	13	113

(1.) Water 54°
(2.) Bottom of town wells.
(3.) Water 53°
(4.) Water 52°

ANOTHER WELL. 1871.

Communicated by MESSRS. S. F. BAKER & SONS.

De Rance, Rep. Brit. Assoc. for 1879, p. 113.

Shaft; upper portion 5½ feet in diameter, and lower portion 4½ feet.

About 70 gallons per minute.

	Thickness.	Depth.
	Feet.	*Feet.*
Clay, with sand and limestone	6½	6½
Clay, very sandy	4	10½
Blue and grey clay and calcareous grit	59	69½
Fine sand	23	92½
Grey sand and clay, with water	22	114

2. One mile S. of Faringdon. For the Waterworks. Communicated by Mr. Geo. WINSHIP, C.E., to Mr. C. E. HAWKINS. 1898.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
Lower Greensand	Sponge gravel	25 0	25 0
	Rock	2 0	27 0
	Sand	4 0	31 0
	Rock	5 0	36 0
[Kimeridge Clay]	Clay	3 0	39 0
Coral Rag	Blue hard rock	3 6	42 6
	Rubble rock	3 0	45 6
	Sandstone rock [Oolitic Freestone].	9 0	54 6
Lower Calcareous Grit	"Sandy Deposit" or "Dead Sand."	34 0	88 6

Shaft 50 ft. 6 in., then a 4-inch bore which yielded very little water. The water comes mostly from the Greensand and the Coral Rag. The yield has not been ascertained.

C. E. H.

Farley Hill.

THE POPLARS. 1900.

Bored and communicated by MESSRS. CALLAS, SONS, & MAY.

		Thickness.	Depth.
Soil	Mould	2½	2½
[Plateau]	Gravel	1	3½
[Lower Bagshot Beds, 32½ feet]	Sand and loam	22½	6
	Sand with a little water	1	27
	Grey clay	1	28
	Sand and loam with water	8	36
London Clay (touched).			

Frilford.

Mr. Aubertin's.

Made and communicated by Mr. Edward Margrett.

Shaft 17 feet, the rest bored.

Water-level 23 feet from surface.

		Thickness.	Depth.
Made earth		2	2
[Lower Corallian]	Rock	4	6
	Sand	4	10
	Rock	2	12
	Sand	20	32
	Rock	6	38
	Alternate layers of rock and sand	12	50
	Rock	2½	52½
	Sand (?)	2	54½

Frilsham.

Frilsham House.

Made and communicated by Mr. Edward Margrett.

Water-level 121 feet below surface.

Dug-well 5 feet in diameter to 120 feet, lined with brick-steining to a depth of 20 feet from the surface, half the depth being in 9-inch, and the remainder in 4½-inch brick-work. At bottom of well, 12-inch bore-hole to a depth of 80 feet.

[Upper] Chalk - - - - - - - - 200 feet.

Goosey.

1. Abbey Farm (9 chains N.N.E. of church). 1897.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water-level 16 feet down. Yield, 480 gallons an hour.

		Thickness.	Depth.
		Feet	*Feet.*
Soil		1½	1½
[Kimeridge Clay, 101½ feet]	Clay and shells	75½	77
	Clay	18	95
	Sandy clay and shells	8	103
[Corallian, 8 feet]	Rock	3½	106½
	Sand	4½	111

W. W.

2. Blackacres Farm, North-eastward of the village. 1896.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water-level 3 feet down. Yield 350 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil		5	5
[Kimeridge Clay]	Brown and blue clay and small pieces of rock	15	20
	Blue clay, with few shells	30¾	50¾
[Corallian]	Rock and sand	6¼	57

W. W.

3. Church Farm (5 chains N.E. of church). 1895.

Bored and communicated by Messrs. Le Grand & Sutcliff.

Water-level 19 feet down. Yield 400 gallons an hour.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
Soil		4 6	4 6
[Kimeridge Clay, 106½ feet]	Hard blue and brown clay	4 0	8 6
	Black shaly clay	39 6	48 0
	Rock (? septarian)	1 0	49 0
	Hard black shaly clay	9 0	58 0
	Hard black shaly clay and shells	9 0	67 0
	Hard black shaly clay, 7 inches of rock at base	13 7	80 7
	Shaly clay and shells	6 5	87 0
	Hard black clay	24 0	111 0
[Corallian 82 feet]	Hard sandstone and shells	3 0	114 0
	Blowing sand	5 7	119 7
	Grey sandstone	2 6	122 1
	Sand	2 0	124 1
	Grey sandstone	13 11	138 0
	Sandstone and clay	18 0	156 0
	Shell rock	0 10	156 10
	Sandstone	2 3	159 1
	Sand and thin bands of clay	33 11	193 0
[Oxfordian, 112 feet]	Blue clay with a little sand	3 0	196 0
	Blue clay	87 0	283 0
	Sandy blue shaly clay	22 0	305 0

W. W.

4. Goosey House (22 chains N. of church). 1896.

Bored and communicated by Messrs. Le Grand & Sutcliff.
Water-level 8¾ feet down. Yield 700 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
[Kimeridge Clay, 77 feet]	Clay	5	5
	Clay and shells	45	50
	Clay, with 6 inches of rock at top	5	55
	Blue clay and shells	22	77
[Corallian Clay, 9 feet]	Sandy clay and rock	3	80
	Rock, with shells	1	81
	Sand	2	83
	Rock	2	85
	Sand	1	86

W. W.

5. Pound Farm (18 chains N.E. of church). 1896.

Bored and communicated by Messrs. Le Grand & Sutcliff.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
Soil		9 0	9 0
[Kimeridge Clay, 84 feet]	Stone	1 0	10 0
	Clay, with 5 inches of stone at base	55 7	65 7
	Clay	5 5	71 0
	Clay and shells, with a little sand	22 0	93 0
[Corallian, 16 feet]	Sand, with stone and shells	2 0	95 0
	Hard rock	3 5	98 5
	Sand and shells	2 1	100 6
	Sandy clay and rock	5 0	105 6
	Bands of sand and rock	2 6	108 0
	Sandstone	1 0	109 0

W. W.

6. Millaway Farm. (Five-eighths of a mile N.E. of church.) 1900.

Bored and communicated by Messrs. Le Grand & Sutcliff.
223 feet above Ordnance Datum. Water-level 11 feet below surface.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
Soil		2 6	2 6
[Kimeridge Clay, 73½ feet.]	Dark-blue clay	47 6	50 0
	Blue clay and shells	26 0	76 0
[Corallian 18 feet.]	Rock	0 10	76 10
	Grey sand	1 10	78 8
	Rock	3 6	82 2
	Grey sand	0 6	82 8
	Rock	1 8	84 4
	Rock and sand	1 6	85 10
	Hard rock	2 0	87 10
	Sand	0 6	88 4
	Rock	1 7	89 11
	Sank	0 10	90 9
	Rock	3 3	94 0

7. Yewtree Farm. 1897.

Bored and communicated by Messrs. Le Grand & Sutcliff.
Water-level 13½ feet down. Yield 600 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
Dry well	[? Old]	—	13
[Kimeridge Clay, 91½ feet]	Clay and shells, with 6 inches of stone at base	3½	16½
	Sandy clay	3½	20
	Shaly clay and shells	3	23
	Clay and shells, with stone at 74 to 74½ feet	81½	104½
Corallian, 9½ feet]	Stone	3½	108
	Coarse sand	6	114

W. W.

Grazeley.

1. Jubilee Cottages. Mr. Bromley's. 1888.

Sunk and communicated by Mr. Callas.
Shaft 45 feet, the rest bored. Water rose to within 10 feet of surface.

		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	3	3
[London Clay.]	Blue clay	67	70
	Black, white, and red sand [Basement-bed.]	10	80

The lowest sand probably Reading Beds.

2. Grazeley Court.

Sunk and communicated by Mr. Edward Margrett.
Shaft, about 20 feet iron cylinders, the rest bored.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
Drift	Soil	2 0	2 0
	Gravel	4 0	6 0
[London Clay, 45 feet 8 in.]	Blue clay	36 0	42 0
	Loamy clay, with shells	4 0	46 0
	Rock	0 2	46 2
	Loamy clay	5 0	51 2
	Rock	0 6	51 8
[Reading Beds, 47 feet.]	Mottled clay	32 0	83 8
	Sand	15 0	98 8

3. Diddenham Farm. 1893.

Bored and communicated by Mr. Alfred Callas.
Tubed 80 feet with 4-inch tube.
Water rose to within 16 feet of the surface.

[London Clay]	Blue clay [water found at 77 feet, probably in basement-bed] - - - - - - - - -	90	100 feet.
[Reading Beds]	Sand - - - - - - - -	10	

4. The Vicarage. 1899.

Bored and communicated by Messrs. Callas, Sons, & May.
Tubed 55 feet with 4-inch tube.
Water rose to within 7½ feet of the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[Valley Gravel, etc.]	Old dug-well - - - -	—	17
[London Clay]	Blue clay - - - - -	53	70
[Reading Beds?]	Bright red coarse sand - -	5	75

Grovelands.

1. Messrs. Colliers' Kiln.

Made and communicated by Mr. S. Joyce.
Diameter of well, 5 feet. Water 17 feet from bottom.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds.]	Sand - - - - -	1	1
	Grey and red clay (mottled) -	14	15
	Green sand and flints - -	3	18
Chalk -	- - - - - - -	62	80

2. At Brickyard, situated about three-eighths of a mile S.W. of the Reading Brigade Depôt.
Information obtained on the spot from the Manager.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds.]	Loam and clay, of a bluish-grey colour and mottled in places with red - - - - -	30	30
	White sand - - - - -	25	55
	Brown sand, of a sharp nature	3	58
	Greyish blue clay (locally called fuller's earth) - - -	32	90
	Greenish sand - - -		
	Oyster-bed and flints - -		
Chalk (touched)	- - - - - - -	—	—

3. At the site of the church, situated about 100 yards westward of the Barracks or Reading Brigade Depôt, and 180 yards south of the Royal Albion Hotel.

From information on the spot at the time of the sinking of the well.

Valley Loam.	Brown stony loam, to chalk -	25	35 feet.
Chalk.	In chalk, to water - - -	10	

Hagbourne.

The Grange. Major Pilcher's.

Bored and communicated by Mr. Edward Margrett.

Shaft 7 feet in depth and 5 feet in diameter.

Water-level 10¾ feet from surface.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[Upper Greensand, 54 feet.]	Hard rubble - - - -	6	3	6	3
	Sandstone rock - - -	1	9	8	0
	Loam and a little red sand -	8	6	16	6
	Sandy and marly beds with nodules - - - -	9	0	25	6
	Solid sandstone rock - -	2	9	28	3
	Marly, with nodules and sandstone rock - - - -	4	3	32	6
	Marly, with nodules - -	10	3	42	9
	Solid sandstone rock and loamy sand - - - - -	11	3	54	0
[Gault]	Clay - - - - -	8	0	62	0

Hampstead Norris.

1. Hotel. No. 2. Manor House.

Sunk and communicated by Mr. Church, of Chieveley.

No. 1.	Clay - - - - - - - -	6	60 ft.
	Chalk - - - - - - -	54	
No. 2.	Gravel - - - - - - -	10	11 ft.
	Chalk - - - - - -	1	

F. J. B.

3 to 8. Communicated by Mr. J. Higgs, of Basildon, to Mr. F. J. Bennett.

3. Beech Farm.

Clay, with flints - - - -	12	261 ft.
Chalk - - - - -	249	

4. Buttonshow Farm.

Water-level 3 feet from bottom.

Clay, with flints - - - - - -	7	267 ft.
Chalk [Upper] - - - - - -	260	

Haw Farm.

Water-level 9 feet from bottom.

Clay, with flints - - - - - -	5	248 ft.
Chalk [Upper] - - - - - -	243	

6. Pibworth Farm.

Water-level 31 feet from bottom.

[Reading Beds] Clay	20	359 ft.
Chalk	339	

7. Woodrow's Farm.

Water-level 2 feet from bottom.

[Reading Beds] Loam and clay	16	340 ft.
Chalk	324	

8. Wyld Court Farm.

Water-level 8 feet from bottom.

Clay, with flints	6	185 ft.
Chalk	179	

Hungerford.

1 to 6. Sunk by Mr. Smith, of Hungerford, and communicated to Mr. F. J. Bennett.

1. Union. 2. Close to Union.

No. 1. Chalk, with flints, to very hard chalk and water		95 feet.
No. 2. Soil	7	98½ feet.
Soft chalk, with flints	88	
Hard chalk	3½	

3. Police Station.

Water-level 3½ feet down.

Soft chalk, with flints - - - - - - 56 feet.

4. Backiday.

Chalk, with flints	55	60 feet.
Chalk rock	5	

5. Brewery.

Soft chalk, with flints - - - - - - 30 feet.

6. Church Street.

Water-level 3½ feet from bottom.

Soil	7	46 feet.
Soft chalk, with flints	23	
Hard chalk	4	
Soft chalk, with flints	8	
Hard chalk	4	

7. Eddington House.

Bored and communicated by Messrs. Isler & Co., of London.

Yield 340 gallons per hour.

Dug-well	132	232 feet.
Bored in chalk	100	

Hurley.

LADY PLACE. 1897.

Two borings made and communicated by Messrs. LE GRAND & SUTCLIFF.
1. Water-level 6 feet down. Yield 2,000 gallons an hour.

——		Thickness.	Depth.
		Feet.	*Feet.*
River Drift	Gravel	16	16
	Blowing sand	6	22
Chalk	Hard chalk and flints	9⅔	31⅔
	Putty chalk	24⅓	56
	Hard chalk	41	97

2. Water-level 9½ feet down. Yield 2,000 gallons an hour.

[River Drift]. Gravel - - - - - 25
Chalk - - - - - - - - - 63 } 88 feet.

W. W

Hurst.

1. Mr. GROSE'S. 1895.

Bored and communicated by Mr. ALFRED CALLAS.
Water rises to within 11 feet of the surface.

——		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	3	3
[Reading Beds 75 feet]	Yellow sand, with water	5	8
	Mottled clay	12	20
	Grey sand and mottled clay, with water.	25	45
	Mottled clay	19	64
	Green sand	8	72
	Black clay and loam	6	78
	Rock [query indurated chalk]	2	80
[Upper Chalk]	Chalk, with flints	20½	100½

2. CASTLE INN. Messrs. H. & G. SIMMONDS. 1894.

Bored and communicated by Mr. ALFRED CALLAS
Water rose to within 32 feet of the surface.

——		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	2	2
Drift.	Shingly gravel	3	5
[London Clay 18 feet.]	Loam and sand	15	20
	Green sand and shells	3	23
[Reading Beds 68 feet.]	Mottled clay	28	51
	Mottled sand and loam	22	73
	Mottled sand	13	86
	Blue loam	5	91
Chalk		19	110

Inkpen.

KIRBY HOUSE. 1899.

Communicated by MESSRS. CALLAS, SONS & MAY.

Notes in square brackets from specimens supplied to me (J. H. B.), and from examination of the material at the spot.

Shaft 11 feet, the rest bored. Dip of strata 26 degrees North

Water-level 225 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[Bagshot Beds 90 feet.]	Soil, &c. - - - - - -	2	2
	Sandy loam [mottled many colours, and containing iron-sandstone nodule].	15	17
	Sandstone [brown colour and very hard].	2	19
	Sandy loam [mottled many colours].	10	29
	Bed of pebbles mixed with sandy loam.	2	31
	Mottled clay and loam - -	17	48
	Mottled loam and more sandy -	17	65
	Dark blue clay [stiff] - -	2	67
	Bed of pebbles, dark blue, mixed with clay.	2	69
	Sand and loam (with water) [coarse loose yellow sand with thin bands of pale grey clay (" pipe-clay ")].	21	90
[London Clay 52 feet.]	Mottled clay - - - - -	5	95
	London clay [stiff dark blue, but weathering light grey, with septarian nodules containing shells].	11	106
	Clay-stone [large septarian nodules, dark grey colour].	2	108
	London clay [dark blue, weathering light grey, with blackish sand at base.]	33	141
	Yellow clay, with small stones in it like gravel [probably part of basement-bed, with the overlying blackish sand]	1	142

KIRBY HOUSE. 1899—continued.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds 75 feet.]	Yellow and red clay - -	1	143
	Mottled sands (with water) [light grey and brown, micaceous].	13	156
	Mottled clay [ash-colour 160 to 168, mottled grey, brown, and pink soapy clay at 173].	19	175
	Mottled sands (with water) [pale brown and white].	5	180
	Mottled clays, very hard [mottled pink and grey soapy clay at 184, similar but more grey in it at 187; dark grey soapy clay at 196, with black carbonaceous matter in it at 198; mottled grey and brown clay at 206; dark grey clay at 208* loamy sand at 210*]	30	210
	"Bottom-bed." Green sands [olive coloured with shells ? oysters].	3	213
	"Bottom-bed." Yellow clay and flints -	2	215
	"Bottom-bed." [Blackish-grey clay and dark green sandy loam with shells (? oysters), with layer of large green-coated flints on top of chalk].	2	217
[Upper Chalk]	Chalk, with flints - - -	103	320

* [This dark grey clay at 208, and loamy sand at 210, probably belongs to the "bottom-bed," making the latter 9 feet thick. J. H. B.]

Kintbury.

BARTON COURT, N. of Kintbury.

Sunk and communicated by Mr. RAVENOR.

Yield 40,000 gallons per day.

[Valley Gravel] Gravel to clay - - - 12 feet.

F. J. B.

Kingston Lisle.

KINGSTON LISLE PARK. 1891. (*See* p. 107).

Information obtained at the spot by J. H. B.

Dug-well, 4½ feet internal diameter.

Upper Greensand 44 feet.

Gault, just touched.

Lambourn.

KINGWOOD HOUSE. Mr. W. I. Palmer. 1890.

Information from Mr. Joyce, the well-digger.

Dug-well, 6 feet internal diameter. Bricked 20 feet down with 9-inch brickwork, and 6-inch concrete backing.

About 707 feet above Ordnance Datum. Water-level 292 feet below surface.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Clay-with-flints, 10 feet.]	[Soil, etc.] Earth	2 6	2 6
	Clay, brown	7 6	10 0
	Flints	1 0	11 0
	Chalk rubble	10 0	21 0
	Wedge chalk	19 0	40 0
	Layer, flints	0 4	40 4
	Chalk	11 0	51 4
	ayer, flints	0 3	51 7
	Chalk	10 0	61 7
	Flints	0 4	61 11
	Chalk laying three ways	16 0	77 11
	Bed flints	0 5	78 4
	Chalk	6 0	84 4
	Bed flint, thin		
	Chalk	8 0	92 4
	Bed flints	0 4	92 8
	Chalk	6 0	98 8
	Thin bed flints		
	Chalk	10 0	108 8
	Thin bed flints	0 1	108 9
	Chalk	3 0	111 0
	Bed flints	0 1½	111 1½
	Chalk, iron rust, hard chalk	3 0	114 1½
	Bed iron rust, flints	0 6	114 7½
[Upper Chalk, 237 feet.]	Chalk	3 0	117 7½
	Flints, black	0 6	118 1½
	Chalk	2 0	120 1½
	Bed, black flints	0 4	120 5½
	Chalk	5 0	125 5½
	Bed black flints	0 6	125 11½
	Chalk	2 0	127 11½
	Bed flints	0 6	128 5½
	Chalk, red sands one side of well	5 0	133 5½
	Chalk and flints, mixed not in beds	5 0	138 5½
	Layer flint [tabular-flint]	0 1	138 6½
	Chalk	4 0	142 6½
	Layer flint [tabular-flint]	0 0½	142 7
	Chalk	2 0	144 7
	Layer flint [tabular-flint]	0 1	144 8
	Chalk	3 0	147 8
	Layer flint [tabular-flint]	0 1	147 9
	Chalk	1 6	149 3
	Three layers of flint apart in beds [tabular-flint]	0 2	149 5
	Chalk	5 0	154 5
	Flints mixed, blue and iron rust centre double beds	0 6	154 11

KINGWOOD HOUSE. Mr. W. I. Palmer. 1890—continued.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Upper Chalk, 237 feet.]	Chalk	3 0	157 11
	Flints [tabular-flint]	0 1	158 0
	Chalk	2 0	160 0
	Flints [tabular-flint]	0 0½	160 0½
	Chalk	4 0	164 0½
	Layer of flint	0 4	164 4½
	Chalk	4 6	168 10½
	Flints mixed with rust iron	0 6	169 4½
	Chalk	4 0	173 4½
	Double beds 2 in. apart	0 4	173 8½
	Chalk	10 0	183 8½
	Flints in thin beds	0 6	184 2½
	Apart, mixed with iron rust	0 2	184 4½
	Chalk and flints "plum-pudding fashion"	8 0	192 4½
	Bed flint	0 2	192 6½
	Chalk	4 0	196 6½
	Bed flints	0 9	197 3½
	Chalk	2 0	199 3½
	Flint bed [tabular-flint]	0 2	199 5½
	Chalk	1 6	206 5½
	Flint-bed [tabular-flint]	0 2	206 7½
	Chalk	4 0	210 7½
	Layer, flint [tabular-flint]	0 1	210 8½
	Chalk	2 0	212 8½
	Layer, flint [tabular flint]	0 1	212 9½
	Chalk	2 0	214 9½
	Flint bed	0 6	215 3½
	Chalk [*Inoceramus* sp.? 220 to 245, and *Rhynchonella* sp.? 220 to 230]	8 0	223 3½
	Flint bed	0 3	223 6½
	Chalk	14 0	237 6½
	Flint bed [tabular-flint]	0 1	237 7½
	Chalk, few scattery flints	10 0	247 7½
[Middle Chalk, 49 feet.]	Hard chalk, mixed iron rust [Chalk-rock, very characteristic, with numerous green-coated nodules]	5 0	252 0
	Very hard chalk	5 0	257 0
	Chalk	39 0	296 0

Lyford.

1. MANOR FARM. (Close to house.) 1900.

Bored and communicated by Messrs. LE GRAND & SUTCLIFF.
Water-level 6 feet below surface.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Kimeridge Clay]	Dug-well	– –	9 6
[Corallian, 13 feet.]	Rock	4 0	13 6
	Rock and sand	4 0	17 6
	Rock	2 6	20 0
	Rock and sand	2 6	22 6

2. Manor Farm. (In field half-a-mile E.) 1900

Bored and communicated by Messrs. Le Grand & Sutcliff.
Water-level 20 feet below surface.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[Kimeridge Clay 32½ feet.]	Dug-well	–	–	16	6
	Blue clay	16	0	32	6
[Corallian, 13½ feet.]	Rock	2	6	35	0
	Rock and sand	11	0	46	0

Maidenhead.

1. East Berkshire Brewery.

Made and communicated by Messrs. G. Isler & Co. Geol. London. Vol. ii., p. 3.
Water-level 18½ feet down. Yield 5,000 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
Shaft	(the rest bored)	–	26
[Upper Chalk]	Chalk	45	71
	Chalk and flints	5	76
	Black flints	12	88
	Chalk and flints	7	95
	Flints	8	103
	Chalk	25	128

2. Stafferton Lodge. Mr. Palmer's. 1899.

Bored and communicated by Messrs. Callas, Sons & May.
Tubed 5 feet with 6-inch tube.

[Valley Drift, &c.]	Old dug well	23	36 feet.
[Upper] Chalk		13	

Midgham.

1. On the Green.

Sunk and communicated by Mr. Piper, of Bucklebury.

[London Clay]	Stiff brown clay	6	21 feet.
	Black clay and shells	15	

2. Near the Railway Station.

Sunk and communicated by Mr. Piper.

[Valley Gravel, etc.]	Gravel	3	13 feet.
	Peat	2	
	Gravel	8	

F. J. B.

Moulsford.

COUNTY LUNATIC ASYLUM. 1883.

Bored and communicated by Messrs. LE GRAND AND SUTCLIFF

Water-level 12 feet from surface.

Yield 250 gallons a minute, or 15,000 gallons an hour.

170 feet above Ordnance Datum.

		Thickness.	Depth.
		Ft. *in.*	*Ft.* *in.*
[Valley Gravel.]	Pit in gravel	6 0	6 0
	Loamy gravel	7 0	13 0
[Lower Chalk.]	Grey rock chalk [chalk marl]	33 0	46 0
[Upper Greensand.]	Green sand	9 6	55 6
	Hard stone and mundic [pyrites?]	4 2	59 8
	Hard grey sandstone	2 6	62 2
	Hard grey sandstone, with layers of clay	18 10	81 0

Another boring has since been made and united with the above, so that water is pumped from both together.]

Newbury.

1 to 4. Sunk by Mr. RAVENOR, of Newbury, and communicated to MR. F. J. BENNETT.

BATH-ROAD.

1. "HALFWAY" INN, 4½ miles W. of Newbury.

[Valley Gravel] Gravel - - - - - 20 feet.

2. NEW INN, 3½ miles W. of Newbury.

[Valley Gravel] Gravel - - - - 4
Chalk - - - - - - - - - 20 } 24 feet.

3. BENHAM HOUSE, S. of.

4 feet of water.

Chalk [Upper] - - - - - - - - 25 feet.

4. BENHAM HOUSE at Laundry.

Peat and gravel - - - - - 7
Chalk [Upper] - - - - - 12 } 19 feet.

5. BENHAM HOUSE, N. of, at "Rookery."

Sunk and communicated by Mr. BETTERIDGE of Newbury.

30 feet. of water.

[Reading Beds] Hard yellow clay - - - 30
Sand - - - - - 10 } 40 feet.

6 to 9. Sunk and communicated by Mr. E. Powers, of Newbury, to Mr. F. J. Bennett.

6. Shaw Cottages, near Shaw Kiln.

No water.

[London Clay]	Brown clay - - - - -	40 feet.

7. The Union.

[Bagshot Beds and London Clay?]	Blue clay and cockle shells -	30 feet.

8. Mr. Wells', opposite the Union.

[Bagshot Beds and London Clay?]	Blue clay - - - - -	70 feet.

9. London Road. Mr. Bowyer's.

[Valley Gravel, etc.]	Gravel - - - -	4	15 feet.
	Malm - - - -	6	
	Peat - - - -	2	
	White gravel - - -	3	

10 to 18. Sunk by Mr. J. Betteridge, of Newbury, and communicated to Mr. F. J. Bennett.

10. Henwick Farm.

[London Clay]	Loamy clay - - -	30	40 feet
	Black clay, with cockle shells at the bottom -	10	

11. Redfield House, S. of Henwick Farm.

Valley Gravel, etc.	Gravel - - - -	10	40 feet.
	Clay and Gravel - -	20	
	Fine gravel - - -	10	

12. Swan Inn, on the Reading Road, a mile N.E. of Newbury.

[Valley Gravel etc.]	Peat - - -	6	12 feet.
	Gravel - - -	6	

13. Near the Police Station.

[Valley Gravel]	Gravel - - - -	20	40 feet.
[Upper Chalk]	Chalk - - - -	20	

14. At junction of Speen and Donnington Roads.

Water-level 9 feet from bottom.

Loam - - - - - - - - -	15	35 feet.
Chalk - - - - - - - - -	20	

15. North-brook Street, Mr. Staple's.

[Alluvium, etc.]	Peat - - - - -	4	8 feet.
	Malm, to gravel - - -	4	

16. West Street, Mr. Allen's.

[Alluvium, etc.]	Malm and peat - - -	3	6 feet.
	Gravel - - - -	3	

17. Craven Street.

[Valley Gravel]	Gravel - - - - -	12	17 feet
[Upper Chalk]	Chalk - - - - -	5	

18. Bartholomew Street, Nuttley's Brewery.

Water-level 20 feet from bottom,

[Valley Gravel]	Gravel - - - - -	12	32 feet.
[Upper Chalk]	Chalk - - - - -	20	

19. Bartholomew Street, Brewery.

Dr. James Mitchell's MSS. Vol. iv., p. 260.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds]	Yellow clay - - - -	14	14
	Pebbles, clay, and sand - -	16	30
	Blue clay - - - -	9	39
	Shells, and rock - - -	6	45
[Upper Chalk]	Chalk - - - - -	135	180

W. W.

20 to 27. Sunk by Mr. J. Betteridge and communicated to Mr. F. J. Bennett.

20. St. John's Schools.

[Valley Gravel]	Gravel - - - - -	10	30 feet.
[Reading Beds]	Sand - - - - -	20	

21. Enborne Villas.

[Valley Gravel]	Gravel - - - - - - -	12	40 feet.
[Reading Beds]	Sand - - - - - - -	12	
[Upper Chalk]	Chalk - - - - - - -	16	

22. Oil Mills, Enborne Road.

[Valley Gravel, etc.]	Gravel and clay - -	12	30 feet.
[Upper Chalk]	Chalk - - - - -	18	

23. Montague Place Newtown Road.

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay]	Blue clay - - - -	20	20
	Black sand with oyster and mussel shells, pebbles and rock [Basement-bed] - -	10	30
[Reading Beds]	White sand - - - -	5	35

24. Stroud Green. Elm Villas.

[Valley Gravel] Gravel - - - - - - 12 feet.

25. Greenham Common. Bury's Bank.

[Valley Gravel] Gravel, to sand with water - - 12 feet.

26. Greenham Church.

[Lower Bagshot] Loam, with water. - - - 35 feet.

27. Pile Hill Villas.

[London Clay] Blue clay, to sand with water - - 30 feet.

28. Wash Common. Church.

Sunk and communicated by Mr. Powers, of Newbury.

[Plateau Gravel] Gravel - - - - - 8
[Lower Bagshot] Sand - - - - - 13 } 21 feet.

29. Wash Common, opposite Church.

Sunk and communicated by Mr. Powers.

[Plateau Gravel] Gravel - - - - - 4
[Lower Bagshot] Sand - - - - - 6 } 10 feet.

30 to 34. Sunk by Mr. Betteridge and communicated to Mr. F. J. Bennett.

30. Wash Common. The Laurels.

[Plateau Gravel] Gravel, to sand [Bagshot] with water - 12 feet.

31. Wash Common. Parish Gravel Pit.

[Plateau Gravel] Gravel - - - - - - 20
[Lower Bagshot] Sand - - - - - - 20 } 40 feet.

32. Wash Road. The Limes.

[London Clay] Hard yellow clay - - - - - 20
[Reading Beds] Sand - - - - - - - 10 } 30 feet.

33. Donnington Castle House.

[Reading Beds] Clay and sand, to chalk - - - - 40 feet.

34. Red Farm, a mile N.E. of Newbury.

Water-level 30 feet from surface (120 feet of water).

[Reading Beds] Clay and sand - - - - - 50
[Upper Chalk] Chalk - - - - - - - 100 } 150 feet.

35. Donnington Vicarage.

Sunk and communicated by Mr. Ravenor, of Newbury.

Loam, to chalk - - - - - - - - - 25 feet.

36 Donnington Villas and Square. Several wells said to be all alike

Sunk and communicated by Mr. Ravenor.

Water-level 4 feet from bottom.

Loam, to chalk - - - - - - - - - - 25 feet.

37. Donnington Infant School.

Sunk and communicated by Mr. Ravenor.

Loam, to chalk - - - - - - - - - - 26 feet.

F. J. B.

38. Near "Fox and Hounds" Inn.

Sunk and communicated by Mr. Church

[Valley Gravel] Gravel - - - - - - 5
Upper Chalk] Chalk - - - - - - - 28 } 33 feet.

39. Shaw Crescent.

Sunk and communicated by Mr. Church

[Valley Gravel] Gravel - - - - - - - 15 feet.

F. J. B.

40. Water-works, Northcroft (in the marsh just above the town). 1877.

J. W. Grover, *Trans. Newbury Field Club*, vol. ii., pp. 246, 247.

Yield from 34,000 gallons an hour at 1½ feet from the bottom, to 19.320 at 5 feet from the bottom. Quality good.

Shaft, through peat and gravel, to chalk - - - 14 feet.

41. Deanwood. 1891.

Made and communicated by Messrs. Le Grand & Sutcliff.

Water-level 119 feet down. Yield, 1,000 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil		4	4
[River Drift?]	Gravel	2	6
	Sand	5	11
[Reading Beds 50 feet]	Mottled clay	22	33
	Sand	2	35
	Blue clay	12	47
	Dark brown sandy clay and shells	14	61
Chalk and Flints		99	160

W. W.

42. Newbury Laundry.

Made and communicated by Mr. Edward Margrett.

Shaft 32 feet (4 feet 10 inches in diameter), the rest bored and tubed with 26 feet of 4-inch tube, $9\frac{3}{4}$ feet of which projects above bottom of shaft.

		Thickness.	Depth.
		Feet.	*Feet.*
Dug-well		—	32
[Reading Beds]	Dark sandy loam	$4\frac{1}{2}$	$36\frac{1}{2}$
	Stiff loam with layer of shells	$1\frac{1}{2}$	38
	Dark green clay	2	40
[Upper Chalk, 32 feet.]	Pasty chalk	5	45
	Chalk and flint in alternate layers	27	72

43. Hawkridge House. (Near Newbury.) Mr. H. Weber's.

Made and communicated by Mr. Edward Margrett.

Shaft 50 feet, the rest bored.

Water-level 47 feet from surface.

[Upper Chalk]	Pasty chalk	136	160 feet.
	Hard chalk with flints	24	

44. Greenham Lodge. 1884.

Bored and communicated by Messrs. Thomas Tilley & Sons.

Piped to 233 feet.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[Plateau]	Gravel and loam	12	0	12	0
Lower Bagshot Beds, 43ft. 2in.]	Brown loam	2	0	14	0
	Brown sand (little water)	4	0	18	0
	Brown loam	10	0	28	0
	Blue clay	7	0	35	0
	Black pebbles [flint]	1	6	36	6
	Blue sand (little water)	4	6	41	4
	Light stone	0	4	41	4
	Dead blue sand	4	8	46	0
	Hard dark stone	1	2	47	2
	Dark-grey sand	5	0	52	2
	Blue sandy clay	3	0	55	2
[London Clay, 60ft. 10in.]	London clay	35	10	91	0
	Black pebbles [flint]	0	6	91	6
	Black sandy clay	24	6	116	0
[Reading Beds, 80 feet.]	Coloured sand and clay	4	0	120	0
	Coloured sand	12	0	132	0
	Light-brown sand and water	15	0	147	0
	Coloured clay and sand	8	0	155	0
	Mottled clay	15	0	170	0
	Green sand and water	13	0	183	0
	Black clay	4	0	187	0
	Hard dark-green sand	8	6	195	6
	Flints	0	6	196	0
Chalk		339	0	535	0

Old Windsor.

Lock (¼-mile N.W. of). Trial boring, 1871.

Communicated by Prof. T. R. Jones. (Memoirs, Vol. iv., p. 424 and Geol. Lond., Vol. ii., p. 4.)

Water rose to a height of 35 feet below the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Mould		3	3
Thames mud		1	4
Valley Drift	Gravel	10	14
	Running sand	6	20
[London Clay, 26 ft.]	Stone	½	20½
	Blue clay	20	40½
	Sandy clay	5½	46
[Reading Beds, 92 ft.?]	Coloured [mottled] clay	40	86
	Brown sand	2	88
	Loam	5	93
	Brown sand; very little water	3	96
	Loam	12	108
	Brown and black clay	18	126
	Coloured [mottled] clay	9	135
	Dead green sand	3	138
Chalk		15	153

W. W.

2. Pelham Place.

From Mr. Trench's Note-book. (Memoirs, Vol. iv., p. 425, and Geol. London, Vol. ii., p. 4.)

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay.]	Blue clay and pebbles [at bottom?]	142	142
[Reading Beds, 80 ft.?]	Coloured [mottled] clay, red	15	157
	Brown clay	12	169
	Sand	1	170
	Brown clay	7	177
	Sand	17	194
	Light-blue clay	7	201
	Sand	4	205
	Coloured [mottled] sand	14	219
	Stone [flints?]	3	222
Chalk		9	231

W. W.

3. The Union, 1852.

From a drawing at the Union, and from specimens in the possession of Mr. Haines (plumber), Egham. Memoirs, Vol. iv., p. 425, and Geol. Lond. Vol. ii., p. 4.

Shaft 60 feet. Water 35 feet down.

	Thickness.	Depth.
	Feet.	*Feet.*
London Clay, rather sandy at 180 ft., and more so at the bottom [basement-bed], about -	190	190
Reading Beds, mottled plastic clays from 191 to 198 ft., and brown sand at 226 ft. - -	50?	240?
Chalk - - - - - - - - - -	47 or more.	287 or more.

W. W.

4. The Union. New boring, 1888.

Made and communicated by Messrs. Isler, and from specimens.

Memoir, Geol. Lond., Vol. ii., p. 334.

With pumps fixed 170 feet down the supply was exhausted in ten minutes, the depth being then 330 feet. When 380 feet deep, the yield was 360 gallons an hour, and at 430 feet this was doubled.

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 197 feet.]	Dug well (old) - - - -		60
	Blue clay. Specimens turned brown (flint-pebbles at 90 and at 154 feet) - - -	137	197
Reading Beds, 70 feet.]	Mottled clays. Specimens dark at first, then lighter-coloured; brown clay at 212; then light-grey mottled, then brown - - - - - -	26	223
	Clay and dead sand. Specimens brown, sandy clay at 232; brown clayey sand drying hard, at 236 - -	12	235
	Blowing sand. Specimen of brown clayey sand, drying hard, at 240 - - - -	15	250
	Dead sand. Specimen of sharp clean sand, apparently washed, at 252 - - -	4	254
	Loamy sand. Specimens, brown clay at 256 and 260; stone (calcareous sandstone) at 256½ - - - - -	6	260
	Mottled clay. Specimens, brown at 264; blackish clay at 265; dark grey messy clay, with bits of flint, at 265½; flints at 267 - -	7	267
Chalk, with flints - - - - - - - -		163	430

W. W.

5. From Mr. Polwhele's Note-Book (? from Dr. J. Mitchell's MSS.).

Memoirs, vol. iv., p. 425 and *Geol. London*, vol. ii. p. 4.

	Thickness.	Depth.
	Feet.	*Feet.*
London Clay	168	168
[Reading Beds] Mottled clay	36	204
[Reading Beds] Sand (touched)	—	—

W. W.

Pangbourne.

1 to 9. Communicated by Mr. John Higgs.

1. Bere Court.

Water-level, 2½ feet from bottom.

Gravelly loam (described as "washed earth")	25	72 feet
Chalk	47	

2. Bere Court Farm.

Water-level, 4 feet from bottom.

Gravel	18	140 feet.
Chalk	122	

3. Cottages on the Basildon Road, Coffee House, Blacksmith's, etc

There are seven wells sunk in the valley gravel, varying from 7 to 13 feet in depth, with water from 2½ to 4 feet from bottom. At Arts' Cottage, at the back of the Elephant Hotel, 13 feet of gravel was dug through, when chalk was reached and penetrated to a depth of 10 feet.

4. On the Tidmarsh Road, at Courtlands, Flowers Farm, etc.

There are four wells sunk in chalk, varying from 10 to 15 feet in depth, with from 2½ to 5 feet of water from the bottom.

5. On the Reading Road.

The Star Inn, School, United Buildings, Dr. Freeman's House, Marsh Farm, Post Office, etc.

There are nineteen wells sunk in valley gravel, varying from 5 to 11½ feet in depth, with from 2 to 4½ feet of water from bottom.

6. On the Streatley Road.

Gas House, Fuller's Cottage, etc.

There are four wells sunk in valley gravel, varying from 6 to 16 feet in depth, with from 2½ to 4 feet of water from bottom.

7. Upper Bowden Farm.

Water-level 8 feet from bottom.

Brown clay	10	205½ ft.
Chalk	195½	

8. Lower Bowden Farm.

Water-level 5 feet from bottom.

Red clay	18	174½ ft.	
Chalk	156½		

9. New Town.

Water-level 12½ feet from bottom.

Gravel and loam	20	223 ft.	
Chalk	203		

10. Pangbourne Board School.

Dug and communicated by Mr. Samuel Joyce.

Water-level 3 feet from bottom; rapid supply.

Soil	2	64 ft.
Chalk in beds from 9 to 12 inches in thickness	52	
Rubble chalk with fissures	10	

Pinkneys.

About 2 miles N.W. of Maidenhead, Ridge Tile Works.

Communicated by Mr. T. Young. (Geol. London, vol. ii. p. 5.)

	Thickness.	Depth.
	Feet.	*Feet.*
To chalk	5	5
Chalk with layers of flints, chiefly nodular, a number of large flints a few feet from the top	60	65
Chalk-rock [?]*, with nodules	1	66
Chalk, with many large irregularly disposed flints	104	170

* [I doubt whether the bed described as "chalk-rock" is really that bed, which divides the Upper and Middle Chalk, but think it rather a similar hard bed in the Upper Chalk. W. W.]

Reading.

1. Brewery. Messrs. Simmonds. 1887?

Made and Communicated by Messrs. Isler.

Dug 4 ft., the rest bored, and tubed for 79 feet. Water-level 5 feet down.

Minimum supply 10,000 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
[River Drift]	Gravel and peat	4	
	Gravel	19	23
	Sand	5	28
Chalk		122	150

2. Whitley Lodge, Mr. Attenborough's.

Communicated by Dr. J. Shea, Medical Officer of Health.

Abandoned. No water.

London Clay. { Clay, about 70 ft. / [Basement bed] { Iron-pyrites, about 1½ ft., gravel [pebbles], a few feet. Iron-pyrites, thinner than the other bed.

3. A dead-well was sunk in the basement of a new house situated in the Bath road, on the south side, at about 150 yards westward of the entrance to Coley Avenue, where the following section was exposed.

Information obtained on the spot at the time of sinking. J. H. B.

	Thickness.	Depth.
	Ft. in.	*Ft. in.*
[Plateau Gravel] Soil, etc.	1 6	1 6
[Plateau Gravel] Pebbly and subangular flint-gravel	6 0	7 6
[Reading Beds] Mottled plastic clay	10 0	17 6
[Reading Beds] White sand	2 0	19 6

4. In garden situated 130 yards south of Christ's Church.

On reaching the sand, the water came in so fast, that the sinkers were obliged to stop.

Information obtained on the spot. J. H. B.

[Plateau Gravel] Pebbly and subangular flint-gravel to sand 16 feet.

5. In the Nursery Gardens at Lower Redlands, 300 yards south of Portland Place and 350 yards S.W. of the Royal Berkshire Hospital.

From information on the spot. J. H. B.

	Thickness.	Depth.
	Feet.	*Feet.*
Valley Gravel, and sand of Reading Beds to Chalk. (The details and thicknesses of the respective beds were unknown to my informant.)	40	40
Chalk, to water	5	45

6. In George Street, S.W. of Children's Recreation Ground, and about 30 yards from the curved railway embankment.

Dug and communicated by Mr. S. Joyce.

Water-level 5 feet from surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Made ground	4½	4½
[Alluvium etc.] Soil	1½	6
[Alluvium etc.] Sharp gritty grey sand	4	10
[Alluvium etc.] Silty grey sand to coarse gravel	5	15

7. Caversham Road by Railway Bridge, opposite Great Western Railway Coffee House. Wheeler Bros.' yard on west side of road.

Dug and communicated by Mr. S. Joyce.

Water-level 5 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Made ground		4	4
[Alluvium etc.]	Peat and bog	2	6
	Sharp gritty grey river-sand	5	11
	Fine gravel, coarser at bottom	8	19

8. Swansea Road, Caversham Road. School Board. 1896.

Two test-borings for ascertaining depth for suitable foundations.

Bored and communicated by Mr. Alfred Callas.

		Thickness.	Depth.
	No. 1 Boring.	*Ft. in.*	*Ft. in.*
[Alluvium, etc., 20 feet.]	Soil	0 4	0 4
	Gravel	0 4	0 8
	Blue clay	4 4	5 0
	Ballast [Gravel]	7 0	12 0
	Running sand	2 0	14 0
	Ballast [Gravel]	6 0	20 0
	Chalk	4 0	24 0
	No. 2 Boring.		
[Alluvium, etc., 20½ feet.]	Blue clay	9 0	9 0
	Gravel	11 6	20 6
	Chalk	3 6	24 0

9. Crown Nursery. Mr. Holder's London-road. 1899.

Bored and communicated by Messrs. Callas, Sons, & May.

Tubed 20 feet with 5-inch tube.

Soil	Mould	1½	50 ft.
[Valley Drift]	Loam and gravel	13½	
[Upper]	Chalk	35	

10. Katesgrove. 1899.

Seven test-borings for foundations of proposed New Church.

Bored and communicated by Messrs. Callas, Sons, & May.

No. 1.

Clay	10	13 feet.
Sand	3	

No. 2.

Clay	12	26 feet.
Sand	1	
Black mixture	8	
Chalk	5	

No. 3.

Clay	9	37 feet.
Black mixture	5	
Grey sand	1½	
Black mixture and clay	7½	
Sand	3	
Loose chalk	2½	
Sand	2½	
Chalk	6	

No. 4.

Clay	8	19 feet.
Loose chalk	1	
Clay	3	
Light sand	3	
Green sand	4	

No. 5.

Clay	3	20½ feet.
Sand	½	
Mottled Clay	5	
Black mixture	1	
Clay	3	
Green sand and clay	2	
Light-green clay	1	
Dark-green clay	1½	
Sand	2½	
Chalk	1	

No. 6.

Clay	4	8 feet.
Black mixture	1	
Loose chalk	1	
Green saud and clay	2	

No. 7.

Red mottled clay	11	14 feet.
Green sand	2	
Chalk	1	

11. Woodley Lodge (3 miles E. of Reading).

J. Rofe, *Trans. Geol. Soc.*, *Ser.* 2, *vol.* v. *p.* 129 (and *Proc. Geol. Soc.*, *vol.* ii. *p.* 72.)

Shaft 95 feet, the rest bored.

		Feet.
[London Clay]	Blue clay	about 40
	Concrete of sheels and clay [basement-bed]	about an inch (with water).
[Reading Beds]	Mottled blue red and white clay	55
	do. do., occasionally sandy	35

Remenham.

1. Park Place (opposite Henley-on-Thames). 1872.

Made and communicated by Mr. R. Paten.

Shaft, 246 feet, the rest bored.

Chalk and flints [? flints in the upper part only] - 480 feet.

2. Remenham Hill. At Three Elms. 1896.

Bored and communicated by Mr. Alfred Callas.

About 314 feet above Ordnance Datum.

Bored 30 feet from bottom of old dug-well 228 feet in depth, and tubed with 5 feet of 4-inch tube.

[All in Chalk with the exception of a few feet of Clay-with-flints at surface.—J. H. B.]

Ruscombe.

1. Mr. Cotterell's. 1893.

Bored and communicated by Mr. Alfred Callas.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds.]	Clay and sand - - -	32	32
[Upper Chalk.]	Chalk, with flints - - -	38	70

2. The Kiln. 1894.

Bored and communicated by Mr. Callas.

Old dug-well [39 feet in Reading Beds and 16 feet in Chalk, from information on the spot.—J. H. B.] - 55
Boring in Chalk - - - - - - - - - 25 } 80 feet.

Sandhurst.

Wellington College. Trial-boring, 1866–68 (*Memoirs*, vol. iv., p. 425).
Communicated by Messrs. Easton & Amos.

		Thickness.	Depth.
		Feet.	*Feet.*
Brown sand and stone [surface-earth] - -		1	1
[Bagshot Beds]	Red sand - - - -	12	13
	Blue sand - - - -	10	23
	Pebbles - - - - -	1	24
	Yellow sand - - - -	6	30
	Loamy clay - - - -	9	39
	Pebbles - - - - -	3	42
	Green sand - - - -	31	73
	Green sand and shells - -	7	80
	Marly clay - - - -	½	80½
	White marl - - - -	3	83½
	Clay - - - - -	2½	86
	„ - - - - -	½	86½
	„ - - - - -	13½	100
	Sand - - - - -	46	146
	„ - - - - -	12	158
[? Passage-bed between the London Clay and the Bagshot Sand.]	Brown loamy sand - -	34	192
[London Clay]	Clay - - - - -	3	195
	Stiff clay - - - -	25	220
	„ „ - - - -	10	230
	Chalk reached at - - -		603

W. W.

Prof. T. R. Jones has given me the following note (? of the same well), dated Dec., 1865.

		Feet.
Yellow sand and pebbles.		—
Green sand; pyrites, *Ostrea*, *Cytherea* - -	at	28
Bits of lignite - - - - - - -	,,	40
Grey sand - - - - - - - -	,,	50
Dark green sand - - - - - - -	,,	60
Green sand full of *Cardita planicosta* - -	,,	70
Lignite and *Cardita* - - - - -	,,	78
Grey clayey sand with lignite - - -	,,	80
Impure pipe clay - - - - - -	,,	80–82
Grey clay - - - - - - - -	,,	82

Since the publication of the section of the deep-boring here, further information has come to hand. An account communicated by Mr. Baldwin Latham agrees with the published one, except in some details of the description of the beds (colour, etc.), and describes the beds below 230 feet (which are not described in the *Memoir*) as follows:

Coloured Clays.	[London Clay, almost wholly at least] -	307 feet.
[Reading Beds.]	Clays and green sand - - - -	66 ,,
Chalk - - - - - - - - - - - -		84 ,,

Another account in the *2nd Annual Report Wellington College Nat. Hist. Soc.*, pp. 24-26 (1871) gives the section below.

		Thickness.	Depth.
Surface Soil.		*Feet.*	*Feet.*
[? Upper Bagshot, and (?) Bracklesham Beds.]	Sand and sandstone [? firm sand], with fragments of iron-pyrites. At a depth of 37 feet a bed of black pebbles.		
	A bed of lignite - about	63	63
[Bracklesham Beds.]	Green sand and clay; at first sandy and only slightly green (8 ft.); then hardened dark green clay (6 ft.). *Venericardia planicosta*, 5–7 and 15 ft. down - - - -	17	80
	Greyish laminated clay - -	2	82
[Lower Bagshot.]	Brown and grey sands - -	110	192
[London Clay.]	Clay with stones [? septaria] every 5 ft.; flint pebble, 229 ft. down - - - - -	288	480
	Liver-coloured clays at a depth of 500 ft. - - - -	—	—
[Reading Beds.]	Mottled clays at a depth of 538 ft. - - - -	—	—
	Greenish clay at a depth of 570 ft., getting more sandy, showing traces of chalk at a depth of 586 ft., which become more plentiful until chalk is reached - - -	—	604
Chalk [according to Sir F. Bramwell] -		130	734

The following particulars communicated by Sir F. Bramwell.

About 300 feet above Ordnance Datum. Shaft, 250 feet, the rest bored. When not pumping, the water rises to within 50 feet of surface, but is lowered by pumping to 157 feet 9 inches, yielding 40 to 50 gallons a minute.

Maximum yield calculated at about 1,100 gallons an hour (letter from Mr. C. J. Lambert). W. W.

3. Ambarrow. Col. Harvey's. 1884.
Bored and communicated by Mr. Edward Margrett.

		Thickness.	Depth.
		Feet.	*Feet.*
Bracklesham Beds, 55 ft. 6 in.	Clay, marl, and sand	10	10
	Green and grey sand with water	6	16
	Green sand and clay, very hard and tough	10	26
	Grey and green sand with water	8	34
	Green sand and clay	12¼	46¼
	Tough clay	9¼	55½
Lower Bagshot Beds.	Clay and sand with water	8¼	63¾

Shinfield.

1. The Grove. Miss Hulme, 1889.
Bored and communicated by Mr. Alfred Callas
Water obtained in black sand at 171 feet from the surface, and it rose 70 feet.

		Thickness.	Depth.
		Feet.	*Feet.*
Drift.	Soil and gravel	20	20
London Clay, 164 ft.	Yellow clay	3	23
	Blue clay	147	170
	Loam	1	171
	Black sand and shells, with 4-inch hard stone at 181 ft. [basement-bed]	13	184

Possibly the above boring may have penetrated 3 feet into sand of the Reading Beds. J. H. B.

2. Mr. Hutching's. 1888.
Bored and communicated by Mr. Alfred Callas.
Water obtained at 75 feet, and it rose to within 17½ feet of the surface.

		Thickness.	Depth.
		Ft. In.	*Ft. In.*
Soil, etc.		4 0	4 0
London Clay, 85½ ft.	Yellow and brown clay	12 0	16 0
	Blue hard stone [septaria]	0 6	16 6
	Blue clay	58 6	75 0
	Black sand and shells [basement-bed]	14 6	89 6

3. Well about a quarter of a mile W. of the church, 1887.
Boring made and communicated by Mr. Callas.
Water rose nearly to surface.

London Clay	Blue clay	90 feet.
	Black sand [basement-bed] with water	10(?) feet.

Shottesbrook.

SHOTTESBROOK PARK. 1897.

Made and communicated by MESSRS. TILLEY & SONS.

Boring 10-inch. Good supply.

Sub-soil - - - - - - -	2	80 feet.
[Upper] Chalk - - - - - -	78	

Shrivenham.

1. SHRIVENHAM HOUSE. (Viscount Barrington.) 1877.

Boring made and communicated by Mr. EDWARD MARGRETT (of Reading).
Particulars from coloured-section drawn to a scale of 4 feet to an inch.
Water-level about 13 feet below the surface.

		Thickness.	Depth.
		Ft. In.	*Ft. In.*
	Loamy clay and sand - -	9 0	9 0
	Quicksand - - - -	2 3	11 3
*[Upper	Sandy clay - - - -	0 9	12 0
Corallian (the	Blue clay with sand - -	18 0	30 0
top 30 ft.	Brown clay with sand - -	2 3	32 3
included with	Stiff clay with shells - -	10 0	42 3
doubt.]	Light corallian stone - -	0 6	42 9
	Blue rock with yellow crystals	10 6	53 3
	Light coloured clay - - -	1 6	54 9
[Lower	Light blue clay with beds of		
Corallian.]	sand; with water - - -	15 3	70 0

*Classification by Mr. H. B. Woodward.

Another version of the same Boring as the above, from a coloured-section drawn to a scale of 8 feet to an inch by the Architect, MR. GRIGGS (of London), and communicated by MR. EDWARD MARGRETT.

		Thickness.	Depth.
		Feet.	*Feet.*
	Ferruginous sand with occasional bands of ironstone and "race" - - -	$11\frac{1}{4}$	$11\frac{1}{4}$
	Sand with clay - - -	$-\frac{3}{4}$	12
	Clay and sand - - -	3	15
	Pure clay - - - -	15	30
	Mottled clay with minute crystals and oolitic grains -	2	32
[Upper Corallian.]	Blue clay with minute shells	3	35
	Blue limestone rock with fossils - - - -	7	42
	White rock - - - -	$-\frac{1}{2}$	$42\frac{1}{2}$
	White rock with occasional bands of sand, and with thin layer of argillaceous shale at base - - -	$9\frac{1}{2}$	52
[Lower Corallian.]	Blue clay and sand - -	17	69

Note on Drawing] It is conjectured that the Oxford Clay would be reached about 50 or 60 feet lower down.

2. Mr. A. W. Fairthorpe's. 1877.

Bored and communicated by Mr. Edward Margrett.

Water-level 14 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[Upper Coral-lian.]	Sandy loam	7	7
	Mottled clays	22	29
	Brown clay and sand	1	30
	Blue stone	2	32
	Dark clay	1	33
	Blue stone	1	34
	Stone and thin layers of sand	6	40
	Blue clay and stone	½	40½
	Stone	5	45½
	Blue stone	½	46

3. Beckett House. 1878.

Made and communicated by Messrs. Thomas Tilley & Sons.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
Made ground		0	6	0	6
[Upper Coral-lian.]	Brown race	5	0	5	6
	Hard red rock	0	9	6	3
	Brown loamy sand and water	2	11	9	2
	Blue clay	15	10	25	0
	Shell-bed	1	1	26	1
	Hard blue rock	17	0	43	1
[Lower Coral-lian.]	Blue loamy sand	37	11	81	0
	Limestone rock	3	6	84	6
	Blue loamy sand	23	6	108	0
	Light sandstone rock	4	6	112	6
	Blue loamy sand	7	6	120	0

Sonning.

1. Holme Park, at the Lodge.

Dug and communicated by Mr. S. Joyce.

Water-level 4 to 6 feet above bottom.

Gravel	(?)	54 feet.
Reading Beds (clay, &c.)	10–12	
Chalk	42	

In digging through every layer of flint in the chalk in the above well, such a bad smell was emitted, that the men were obliged to come to the surface.

2. Sonning Water-works, near the S.W. corner of Holme Park. 1892–3.

Tube-well 75 feet in depth, and lined with 60 feet of 5-inch iron tube.

Bored by Mr. Alfred Callas.

Water-level about 10 or 11 feet from surface. Yield 70 to 99 gallons per minute. (*See* p. 108.)

Drift]	Loam, about	10	75 feet.
[Upper]	Chalk with flints	65	

A paper giving full particulars of the above Water-works was written by Dr. Ashby (Medical Officer of Health for Reading, etc.) and published in "*Public Health*," May, 1895, p. 285; from which the above information and following extract are taken :—

"Below the end of the lining, several layers of flint were penetrated . . . . so water enters very freely. . . . . In order to try the yield of water a centrifugal pump was fixed to the suction-tube and worked by steam-power for 24 hours without intermission, when water was raised at an average rate of about 70 gallons a minute. At the end of that time, with the engine working at its full power, a tank holding 198 gallons was filled in exactly two minutes, or at the rate of 99 gallons a minute. The pump was then removed, and five minutes after the engine was stopped water stood in the bore-hole at exactly the same height it did before the pumping commenced. It was evident that the boring would have yielded a larger quantity of water if more power had been at command."

3. French Horn Hotel.

Dug and communicated by Mr. S. Joyce.

Water-level 2 feet from surface.

Alluvium, &c.	Loamy soil	1½	15 feet.
	Sand	13½	

Sotwell.

1. Sotwell Hill. (Mr. A. D. Well's.) 1894.

Bored and communicated by Mr. Alfred Callas.

Tubed 65 feet with 5-inch tube.

Water-level 97 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil	Mould and yellow clay	2	2
[Lower Chalk]	Loose rubble	40	42
[Upper Greensand, 75 feet]	Green sand and loam	15	57
	Rock	7	64
	Rubble and layers of stone	53	117
[Gault]	Slate-coloured clay	3	120

2. Slade End. (Mr. Morphew's.) 1895.

Bored and communicated by Mr. Alfred Callas.

Tubed 40 feet with 5-inch tube.

Water-level 54 feet from surface.

Soil, etc.		6	83 feet.
[Upper Greensand]	Drab rubble	68	
[Gault ?]	Blue rubble	9	

Stanford Dingley.

1. Tanyard.

Sunk and communicated by Mr. Piper, of Bucklebury.

[Valley Gravel]	Gravel	7 feet.
[Upper Chalk]	Chalk.	

2. JENNET HILL.

Sunk and communicated by MR. PIPER.

[Reading Beds] 35 feet deep, with oyster shells at bottom. F. J. B

3. JENNET HILL. (For Bradfield District Council.) 1900.

Bored and communicated by MESSRS. CALLAS, SONS, & MAY.

Tubed 30 feet with 5-inch tube, and 50 feet with 4-inch tube.

Water level 40½ feet from the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil	Mould	2	2
[Drift]	Gravel	1	3
[Reading Beds, 42 feet]	Mottled clay	27	30
	Running mottled sand	6	36
	Brown clay	1	37
	Green sand and shells and water	5	42
	Blue clay	3	45
Chalk		46	91

4. HALF A MILE S.E. OF THE CHURCH.

Sunk and communicated by MR. PIPER.

London Clay	Brown clay	20	31 feet.
	Black clay and shells [Basement-bed]	11	

F. J. B.

Stanford-in-the-Vale.

STANFORD PARK FARM, eastward of the Village. 1896.

Made and communicated by MESSRS. LE GRAND & SUTCLIFF.

Water-level 9 inches down. Yield 350 gallons an hour.

		Thickness.	Depth.
		Feet.	*Feet.*
Well		—	12
[Kimeridge Clay]	Blue clay and shells with 6 inches of stone at the base	27	39
	Band of stone, clay, and shells	13	52
	Blue clay and shells	17	69
	Sandy clay	3	72
[Corallian]	Stone	3⅓	75½
	Sand	½	76

Stratfield Mortimer.

1. Perrins Farm. 1893.

Bored and communicated by Mr. Alfred Callas.

Water rises to within 49 feet of the surface.

Shaft 60 feet.

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 160 feet]	Yellow clay	18	18
	Sand	1	19
	Blue clay	136	155
	Green and black sand [Basement-bed]	5	160
[Reading Beds, 5 feet]	Yellow sand ?	2	162
	Rock [indurated sand	3	165

2. Little Park Farm. 1894.

Bored and communicated by Mr. Alfred Callas.

Water rises to within about 20 feet from the surface.

Shaft 30 feet; the rest bored.

		Thickness.	Depth.
		Feet.	*Feet.*
Dug-well		30	30
[London Clay, 142 feet]	Loam and yellow clay	20	50
	Blue clay	115	165
	Pebbles		166
	Black and green sand	6	172
Reading Beds.	Stone and yellow sand	4	176

At Cottages N.E. of Railway Station, 1894.

Bored and communicated by Mr. Alfred Callas.

Water rises to within 30 feet of the surface

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 130 feet]	Brown and blue clay with basement-bed consisting of black and green sand	130	130

4. Oakfield, Mr. G. W. Tyser. 1899.

Made and communicated by Messrs. Callas, Sons, & May.
Shaft, 80 feet; the rest bored.
Water-level 60 feet from the surface. (*See* p. 108.)

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 134 ft.]	Clay	122	122
	Basement-bed of running sands, green and blackish sands, and shells, and a little water	12	134
[Reading Beds, 69 ft.]	Mottled hard and dry clay, crimson, grey, yellow, brown and light blue	46	180
	Mottled clay, fine sand and loam	8	188
	Mottled clay, very hard	4	192
	Mottled grey sands (water rose to within 71 ft. of surface of ground)	4	196
	Dark blue clay	3	199
	Very fine blackish sand and loam	4	203
[Upper Chalk]	Chalk	50	253

5. The Vicarage. 1888.

Bored by Mr. Callas. Information obtained on the spot by J. H. B.
Water-level 79 feet from surface. Water reached at 169 feet, and rose 90 feet.
Tubed to 125 feet.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Valley loam, etc., 14 ft.]	Brown loam	13 0	13 0
	Subangular gravel, with a layer of shells at base, mostly univalves, resting on clay	1 0	14 0
London Clay 164½ ft.]	Dark grey clay, brownish in part, lignite at 130 ft, Septaria at 35 ft. and 106 ft. from surface	136 0	150 0
	Black argillaceous sand, most clayey in upper part, lignite at 151 and shark's tooth at 153 ft.	12 0	162 0
	Basement Bed. Green sand intermixed with dark grey clay	10 0	172 0
	Basement Bed. Green sand intermixed with dark grey clay, with fragments of shells	6 0	178 0
	Basement Bed. Hard layer of grey limestone, casts of shells, lignite and pyrites, and thin ferruginous seam at base	0 6	178 6
[Reading Beds 7½ ft	Mottled green, grey and brown clay	7 6	186 0

6. The Vicarage. (Another well and boring on higher ground.) 1898.

Made and communicated by Mr. Alfred Callas.

Shaft 4½ feet in diameter and 130 feet in depth, the rest bored and lined with 4-inch tube.

Water-level 112 feet from the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay, 200½ feet]	Clay	185	185
	Black sand and shells [Base-ment-bed]	15½	200½
[Reading Beds, 52½ feet]	Mottled clay	39½	240
	Grey sand and water	3	243
	Loam	8	251
	Running sand	2	253

Streatley.

1 to 23. Communicated by Mr. John Higgs, of Basildon.

1. Burnham House.

Water-level 4 feet from bottom.

Soil, mould, etc.	5	66½ feet.
Chalk	61½	

2. Hill House.

Water-level 4½ feet from bottom.

Soil, mould, etc.	5	86 feet.
Chalk	81	

3. The Beeches.

Water-level 4½ feet from bottom.

Soil, "washed earth," etc.	12	84 feet.
Chalk	72	

4. Well near Chapel.

Water-level 3 feet from bottom.

Soil, "washed earth," etc.	28	117 feet.
Chalk	89	

5. Cottage higher up than above.

Water-level 3½ feet from bottom.

Soil, "washed earth," etc.	19	128 feet.
Chalk	109	

6. Warren Farm.

Water-level 4 feet from bottom.

Chalk - - - - - - - - - 120 feet.

7. Townsend Farm.

Water-level 4½ feet from bottom.

Soil, "washed earth," etc.	5	66 feet.
Chalk	61	

8. Holders Cottages, Chesnut Cottage, Place Farm, Elm Lodge House, Gould's House, etc.

There are seven wells sunk in chalk, varying from 48 to 66 feet in depth, with water from 4 to 4½ feet from bottom.

9. Post Office and four other Cottages.

These five wells are sunk through gravel, and vary from 15 to 44 feet in depth, and contain from 2 to 4 feet of water from bottom.

10. Blacksmith's Shop.

Water-level 3 feet from bottom.

Soil, mould, etc.	4	61 feet.
Chalk	57	

11. Keeper's House.

Water-level 8½ feet from bottom.

Soil, mould, etc.	8	210 feet.
Chalk	202	

12. Manor Farm, Southridge.

Water-level 10 feet from bottom.

Red loam	20	268 feet.
Chalk	248	

13. Southridge Farm.

Water-level 6 feet from bottom.

Clay, with flints	15	141 feet.
Chalk	126	

14. Streatley Farm.

Water-level 6 feet from bottom.

Gravel	27 feet.

15. Streatley Farm Cottages.

Water-level 3 feet from bottom.

Gravel	8	51 feet.
Chalk	43	

16. Field Barn.

Water-level 3 feet from bottom.

Soil, "washed earth," etc.	8	97 feet.
Chalk	89	

17. Rectory Cottages.

Water-level 8½ feet from bottom.

Soil, "washed earth," etc.	7	81½ feet.
Chalk	74½	

18. Rectory Farm.

Water-level 10 feet from bottom.

Soil, "washed earth," etc.	8	85 feet.
Chalk	77	

19. Westridge Farm.

Water-level 13 feet from bottom.

Loam and flints	15	340 feet.
Chalk	325	

20. Westridge Green Farm.

Water-level 11 feet from bottom.

Loam and flints	9	326 feet
Chalk	317	

21. Gould's Farm.

Water-level 2 feet from bottom.

Loam	8	176 feet.
Chalk	168	

22. Kiddington Bottom.

Water-level 15½ feet from bottom.

Chalky soil	5	142 feet.
Chalk	137	

23. Wood's Farm.

Water-level 12 feet from bottom.

Loam	7	105 feet.
Chalk	98	

Sunninghill.

Armitage Hill. 1867.

Made and communicated by Messrs. Tilley.

		Thickness.	Depth.
		Feet.	*Feet.*
[Bracklesham Beds]	Light sand	2	2
	Brown sand	6	8
	Light-green sand (full of water)	31	39

Thatcham.

1. The Vicarage.

Boring made and communicated by Edward Margrett (of Reading).

Water rose 2 feet above surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Flint-gravel	8	8
Reading Beds	77	85
Chalk	15	100

2. Mr. Henry's Paper Mills. 1897.

Made and communicated by Messrs. Le Grand & Sutcliff.

Water rose 25 feet above the surface, and flowed, at the surface, at the rate of 60 gallons a minute.

	Thickness.	Depth.
	Feet.	*Feet.*
[River Drift] Ballast [gravel]	19	19
[Reading Beds] Coloured [mottled] clay	61	80
[Reading Beds] Green sandy clay	8	88
Chalk and flints	27	115

W. W.

3. From Prestwich's "Water-bearing Strata," p. 67 (1851).

Water rose to the surface, at the rate of 200 gallons a minute.

Gravel and Tertiary beds 100
Chalk 3 } 103 ft.

4. Mr. A. H. Tull's. 1893.

Bored and commnnicated by Mr. Edward Margrett.

Tubed 68 feet. Water-level 13½ feet from the surface.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[Valley Drift]	Gravel	14	6	14	6
[Reading Beds, 47½ feet.]	Yellow sand	9	0	23	6
	Mottled clay	9	6	33	0
	Green sand	26	8	59	8
	Pebble-bed	0	4	60	0
	Dark-green shelly clay	2	0	62	0
[Upper]	Chalk with flints	40	0	102	0

Theale.

1. Mr. Blatch's Brewery. 1872.

Piped 120 feet down from surface, 10-inch pipe down to 22 feet, then 8-inch for the remainder.

Water-level 3 feet down from surface. By continual pumping reduced the water to 12 feet from surface, but never lower.

	Thickness.	Depth.
	Feet.	*Feet.*
Made ground, soil, loose stones and clay	3	3
Coarse gravel with a little sand and clay	4	7
Sand	1	8
Rubbly soft chalk [detritus?], soft and brown in colour	7	15
Chalk with flints	125	140

2. In the village there are five public pumps, each bored down to 30 feet; being about 15 feet of valley gravel and discoloured soft chalky matter, and about 15 feet of chalk with flints.

Three Mile Cross.

1. Great Lea Farm. 1882.

Boring made and communicated by Mr. Edward Margrett.

Water rose to 12 feet below surface.

London Clay and Reading Beds - - - 80 feet.

2. Great Lea House. Mr. Body. 1894.

Bored and communicated by Mr. Alfred Callas.

Bored from bottom of old well 18 feet deep, shaft afterwards deepened to 32 feet.

Water rises to within 18 feet of surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Old shaft [Gravel over clay] - - - -	—	18
[London Clay, 81 feet.] Clay - - - - -	73	91
[London Clay, 81 feet.] Black sand [Basement-bed] -	8	99
[Reading Beds, 55 feet.] Mottled clay - - - -	44	143
[Reading Beds, 55 feet.] Mottled sand - - - -	11	154

3. Mitford Coffee Tavern.

Boring made and communicated by Mr. Edward Margrett (of Reading).

Water rose to about 15 feet below the surface.

London Clay and Reading Beds - - - 90 feet.

Sand and pebbles at base [probably all London Clay and its basement-bed.—J. H. B.]

4. Mr. Wyeth's. 1897.

Bored and communicated by Mr. Alfred Callas.

Tubed with 50 feet of 4-inch tube.

Water rose to within 4 feet of the surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Soil - - - Mould - - - - - -	2	2
[Drift] - - Gravel and water - - -	4	6
[London Clay, 66 feet] Yellow clay - - - -	3	9
[London Clay, 66 feet] Sand - - - - -	1	10
[London Clay, 66 feet] Blue clay - - - -	50	60
[London Clay, 66 feet] [Basement-bed] Green sand and shells -	2	62
[London Clay, 66 feet] [Basement-bed] Black sand and loam -	10	72
[Reading Beds] Yellow sand - - - -	4½	76½

Tilehurst.

1. Calcot Gardens, north of Calcot Grange.

Communicated by Mr. S. Joyce.

Shaft bricked 32 feet down. Supply 500 gallons per hour.

		Feet
[Reading Beds, 27 feet]	Dark-grey clay	14
	Yellow and white sand	9
	Green sand, with layer of large flints at base	4
Chalk, 120 feet.	Chalk (dug 4′ in diameter)	60
	,, (bored with 4-inch auger)	60
		147

2. Tilehurst Common.

Most of the cottages on Tilehurst Common are supplied with water from surface-wells. One of the deepest that I saw sunk is situated 300 yards south of the "Bird in Hand," and 350 yards south-east of the Independent Chapel, on the south side of the road.

Water-level, 7 feet from surface of ground.

Information obtained on the spot.—J. H. B.

Plateau gravel, etc. Gravel and loam - - - 13 ft.

There is a well situated a little more than 200 yards W.S.W. of the Independent Chapel, on the west side of the road, where the water-level is only 4 feet from the surface of the ground.

3. "Newdams." 1894.

Dug and communicated by Mr. Samuel Joyce.

Water reached at 154½ feet from the surface ; rose 9 feet in quick time at finish.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Drift]	Soil, etc.	1 6	1 6
	Gravel mixed with strong red clay	4 6	6 0
[Reading Beds, 20 ft. 6 in.]	Clay and sand	5 0	11 0
	Sand (builders')	6 6	17 6
	Brown sandy loam	4 0	21 6
	Sharp red sands, pebbles at bottom	3 0	24 6
	Dark green sand with large flints	2 0	26 6
[Upper Chalk]	Chalk, with flints	140 0	166 6

4. Mr. Rupert Clark's.

Well dug and communicated by Mr S. Joyce.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[London Clay, 44¾ ft.]	Ploughed land [soil]	2 0	2 0
	Yellow clay	4 0	6 0
	Blue clay	4 0	10 0
	Brown clay	6 0	16 0
	Mottled clay mixed with sand	14 0	30 0
	Brown clay	2 0	32 0
	[Basement Bed, 12 ft. 9 in.] Green sand and shells	6 0	38 0
	[Basement Bed, 12 ft. 9 in.] Mixture of clay and ishing glass [selenite]	4 0	42 0
	[Basement Bed, 12 ft. 9 in.] Rock, feather-edged one side of well, other side	0 9	42 9
	[Basement Bed, 12 ft. 9 in.] Round pebbles and sand	2 0	44 9
[Reading Beds, 51 ft.]	Grey sand (sharp)	16 0	60 9
	Yellow sands	0 6	61 3
	Blue clay slate in thin beds	9 0	70 3
	Brown clay, loamy	14 0	84 3
	Grey running sand	10 0	94 3
	Green sands mixed with gravel [pebbles?]	2 0	96 3
Chalk, 62¾ ft.	Chalk	4 0	100 3
	Bed of flints	0 9	101 0
	Chalk, with few flints	58 0	159 0
	Water level		

5. Westgrove Brickyard. Messrs. Higgs and Sons.

Dug and communicated by Mr. S. Joyce, 1890.

Water rose to 4 feet standing level.

		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	1	1
[Reading Beds.]	Brown clay	5	6
	Sand (fit for building purposes)	20	26
	Black clay	5	31
	Sharp grit sand, with layers of oyster shells	2	33
	Green sand, last foot mixed with stones	5	38
[Upper Chalk]	Chalk-with-flints	38	76

6. Messrs. Wheeler Bros.' Pottery.

Communicated by Mr. S. Joyce.

Shaft 4 ft. in diameter to a depth of 150 ft. with bell-shaped bottom 6 ft. in diameter, bored 50 ft. additional. Bore-pipe 4 ft. above the 150 ft. Bricked 30 ft. from surface.

	Thickness.	Depth.
	Feet.	*Feet.*
[Reading Beds] Sand	1½	1½
Grey clay	4	5½
Mottled blue and brown clay	8	13½
Stiff red clay	5	18½
Grey sand with flints, fishes' teeth and shells	1½	20
Chalk	180	200

7. Westwood House (Mr. Sutton's).

Communicated by Mr. S. Joyce.

Shaft 4 ft. in diameter, bricked 75 ft. from surface. Land-springs met with to a depth of 32 ft. from surface.

Level of water 4 ft. from bottom.

	Thickness.	Depth.
	Feet.	*Feet.*
[Plateau Gravel, 10 ft.] Soil and gravel	2	2
Clayey gravel	8	10
[London Clay (?) 13 ft.] Loamy brown clay	5	15
Dark blackish-blue clay	8	23
Mottled grey and red clay	9	32
Red clay	4	30
[Reading Beds, 47 ft.] Coarse red sharp sand	10	40
Light buff sand	10	56
Clean white sand	8	64
Green sand with flints	6	70
Chalk. (At 160 ft., 11 inches of white sand was met with.)	94	164

Details of Reading Beds given from memory.

8. Roebuck Inn.

Communicated by Mr. S. Joyce.

Water, 5 ft. above bottom.

Chalk - - - - - - - - - 90 ft.

9. TILEHURST AND PANGBOURNE WATER-WORKS. Kentwood Kiln.
Dug and communicated by Mr. SAMUEL JOYCE.
Water-level 86 feet from surface. Slow supply.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds]	Loam and sand, with layer of large flints at base - -	20	20
[Upper Chalk]	Chalk and flints (lumps of pyrites at 109 ft), thin layers of flint at 110 ft., then very thick beds of chalk 4 to 5 ft. in thickness, with very thin joints between each bed; flints became thicker and closer towards the bottom)-	186	206

Twyford.

1. MR. GARDNER.
Bored and communicated by MR. ALFRED CALLAS.
Water-level 35 ft. from surface.

	Thickness.	Depth.
	Feet.	*Feet.*
Reading Beds. Yellow clay and sand - -	29	29
Chalk, with flints - - - - - -	41	70

2. THE VICARAGE. 1891.
Made and communicated by MR. EDWARD MARGRETT.
Dug-well 25 feet, the rest bored and tubed 27¼ feet below bottom of well.
Water-level 57½ feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[Drift] -	Ballast [gravel] - - - -	25	25
[Reading Beds, 30 feet]	Mottled clay - - - -	11	36
	Dark-blue clay - - -	2	38
	Yellow clay - - - -	7	45
	Sand and water - - -	1	46
	Yellow clay - - - -	6	52
	[Bottom-bed] Dark clay -		
	[Bottom-bed] Black stones and green-coated flints -	3	55
[Upper Chalk, 35 feet]	Pasty chalk - - - -	3½	58½
	Hard chalk with layers of flint	31½	90

Wallingford.

1. Anchor Brewery. 1883.
Made and communicated by Messrs. Le Grand & Sutcliff.
Water-level 1½ feet below surface.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Valley Gravel.]	Dug-well	—	11 0
	Sand	11 0	22 0
	Blue clay	4 0	26 0
	Stiff blue clay and stones	10 0	36 0
	Blue clay	10 0	46 0
[Upper Greensand.]	Soft sandstone	0 6	46 6
	Green sand	0 6	47 0
	Soft sandstone	1 6	48 6
	Sand	0 6	49 0
	Soft sandstone	1 6	50 6
	Grey marl	0 6	51 0

2. Waterworks, in field west of railway station. 1884.
Made and communicated by Messrs. Le Grand & Sutcliff.
Shaft 10¾ ft., the rest bored. Water-level 5¾ ft. beneath the surface.
Yield 100 gallons per minute, or 60,000 gallons per day of 10 hours.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Soil, etc.]	Dug-well	2 6	2 6
[Upper Greensand.]	Marly sand	10 6	13 0
	Soft sandstone	3 0	16 0
	Hard sandstone	8 6	24 6
	Blue stone and clay	22 3	46 9
	Hard blue stone	6 6	53 3
	Blue sandy clay	2 0	55 3

Waltham St. Lawrence.

1. Brewery House, Castle Street. 1894.
Bored and communicated by Mr. Alfred Callas.
Water rises to within 20 ft. of the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
Soil		4	4
Drift.	Gravel with water	12	16
[Basement-bed of London Clay, 10 ft.]	Green loam and shells	4	20
	Rock, water under this	2	22
	Sand and pebbles	4	26
[Reading-Beds, 61 ft.]	Mottled clay	16	42
	Yellow running sand	8	50
	Mottled clay	10	60
	Mottled running sand	5	65
	Mottled clay	5	70
	Hard blue clay	10	80
	Green sand, clay and shells	7	87
Chalk		17	104

2. The Dene. Mrs. Wodehouse. 1899.
Bored and communicated by Messrs. Callas, Sons, & May.
Tubed 6 feet with 6-inch cast-iron pipe.

Old dug-well - - - - - -	18	48 feet.
Chalk and flints - - - - -	30	

Wantage.

1. Wantage Brewery Co. 1889–90.
Communicated by Messrs. C. Isler & Co.;* and from specimens examined by Mr. H. B. Woodward and Mr. A. Strahan.
Jurassic Rocks of Britain, vol. v., pp. 126, 127.
Dug-well or shaft 46 ft., the rest bored.
Water-level 83 ft. from the surface, supply abundant from 3-inch tube.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[Upper Greensand, 46 ft.]	Chalky and Sandy Beds [Dug-well] - - - -	46	0	46	0
[Gault, 229 ft.]	Grey, slightly micaceous and calcareous - - - -	—		—	
	Hard Clay, with band of sandstone at depth of 68 ft.	229	0	275	0
	Clay with Sand Seams: coarse quartz grains and pebbles of hard siliceous rock -	4	0	279	0
[Kimeridge Clay? 94 ft.]	Hard Green Sand: grey clay with decayed shells at 280 -	8	0	287	0
	Hard Dark Clay: with decayed shells at 320, and fibrous carbonate of lime ("beef") at 354 - - -	71	0	358	0
	Hard Clay with Shells: greenish-grey clay with decayed shells at 360 - -	5	0	363	0
	Hard Clay - - - -	9	0	372	0
	Hard Stony Clay - -	1	0	373	0
[Corallian Beds, ? 77 ft.	Rock: white marly rock at 373	3	0	376	0
	Clay: stiff grey marly clay at 377, and white marly rock at 378 - - - - - -	20	0	396	0
	Rock: dark shelly clay with *Pecten* or *Lima* at 397 - -	7	0	403	0
	Light Grey Sand: crumbly calcareous rock at 404 - -	1	6	404	6
	Rock: white calcareous rock at 405 - - - - -	3	3	407	9
	Dark Green Loamy Sand: calcareous gritty rock at 409	5	3	413	0
	Hard Blue Clay: grey shelly clay at 416 - - - -	3	0	416	0
	Rock: white chalky rock at 416, and bits of *Ostrea*, some pyritic, at 434 - - -	18	6	434	6
	Light Grey Sand: greenish calcareous sandy bed at 435	3	6	438	0
	Dark Grey Loamy Sand: greenish calcareous sandy bed at 450 - - - -	12	0	450	0

* The information given by Messrs. Isler is put in capitals, to distinguish it from the notes which were made from the specimens.

The water from the Corallian Beds in the above boring did not prove satisfactory for brewing purposes, and Mr. G. Martin, the manager of the Wantage Brewery Company, informed Mr. A. J. Jukes-Browne "that in August, 1898, they sank a new shaft to a depth of 32 feet, and from it drove two tunnels through the sandy marl, [at the base of the Malmstone (Upper Greensand)] going 80 feet in one direction and 20 feet in an opposite one; they met with several good springs, and by this means obtained a sufficient supply of suitable water without going to a greater depth." *See*, "The Cretaceous Rocks of Britain," Mem. Geol. Survey, by A. J. Jukes-Browne, vol. i. pp. 437 and 438. (1900.)

2. Wantage Water-works, near the Reservoir. 1900.

Rored and communicated by Messrs. Le Grand & Sutcliff.

Site 346 feet above Ordnance Datum.

Water-level 40½ feet below surface. Copious supply obtained.

———	Thickness.	Depth.
	Feet.	*Feet.*
Top soil	8	8
[Lower Chalk] Marl and stone (chalk)	5	13
[Upper Greensand, 65 feet] Green sand (dry)	24	37
[Upper Greensand, 65 feet] Hard dry green sand	6	43
[Upper Greensand, 65 feet] Hard green sand (water met with at 46 feet)	7	50
[Upper Greensand, 65 feet] Marl and stone	28	78
Gault	2	80

Wargrave.

1. Thatched House. Major W. C. F. Molyneux. 1895.

Bored and communicated by Messrs. Merryweather & Sons.

Water-level 20 ft. from surface. Bore-hole 6 inches in diameter.

———	Thickness.	Depth.
	Feet.	*Feet.*
Soil and sand, Broken chalk and flints	25	25
Solid chalk [Upper Chalk]	15	40

Wargrave and Twyford Water-works. 1894–1896.

The site of the well (223½ feet above Ordnance Datum) is at Tag Lane, one mile E. of the village of Wargrave.

The following particulars are obtained from a Report, for the year 1896, by Dr. Ashby (Medical Officer of Health of Reading and of the Wokingham Urban and Rural Districts), from information furnished by the engineer, Mr. Arthur Marshall, and by the contractors, Messrs. Thos. Tilley & Sons.

Shaft, 6 feet in diameter to a depth of 126½ feet, with 9-inch brick-steining to 37 feet, then 4½ inch down to 105¼ feet from the surface. At 106 feet there is a fissure in the Chalk from which a very considerable supply is obtained when the water-level is above it. At the bottom of the shaft or well there are two borings, one 9-inch down to the "Chalk Rock" (326 feet

from the surface), and the other 15-inch, with a 5-inch bore-hole through the "Chalk Rock" and 20 feet beneath it, to a total depth of 351½ feet from the surface.

Headings had to be driven from the bottom of the shaft in order to obtain a sufficient supply of water.

"The total length of headings is 208 feet. Twelve feet of heading, 4 ft. 6 in. wide by 6 ft. high, run west from the well. Running north from that there are 80 ft. of heading, 6 ft. 3 in. wide by 6 ft. high, with a continuation of 48 ft. measuring 4 ft. 6. in. by 5 ft. 6 in. high. Running southwards from the branch from the well there are 42 ft. of heading, 6 ft. 3 in. wide and 6 ft. high, with 26 ft. of 6 ft. by 6 ft. heading branching out to the west. During their construction at least six fissures yielding a flow of water were cut."

"The total capacity of the headings is 7,023 cubic feet, and the capacity of 36 ft. in depth of the well is 1,133 cubic feet. This represents a storage capacity of about 51,000 gallons, so if water should come in slowly in any dry season there is room for it to accumulate in sufficient quantity at night for pumping during day time." (*See* p. 108.)

Water-level 110½ feet from the surface in November, 1895, and 86 feet in April, 1897, thus showing a difference of 24½ feet in the level of the plane of saturation.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds]	Mottled clay, loam, etc., about	12	12
[Upper Chalk]	Chalk and flints - - - -	314	326
[Middle Chalk]	Chalk Rock - - - -	5½	331½
	Chalk - - - - - -	20	351½

White Waltham.

Waltham Place. 1894.

Communicated, with specimens, by Miss F. E. Ellis.

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds]	Brown clay, mixed with a little red clay and turning greenish toward the base - -	52	52
	Stone. Specimen of pyrites -	1	53
	Green sand. Specimen grey (dry) - - - - -	5	58
	Oyster-bed, with flints, specimens, compacted clayey sand with green grains and some of the flints green-coated; and *Ostrea*. Many of the shells were perfect and double- - - - - -	3	61
Chalk; with a level layer of flint, about an inch thick, the surface of which was polished at the top. On getting into the chalk the well was filled with foul air at first. - - -		7	68

W. W.

Whitley (near Reading).

1. At junction of roads, north of School, a little more than one mile north of Threemile Cross.

Boring sunk and communicated by EDWARD MARGRETT (of Reading).

London clay - - - - - -	58	90 feet
Reading Beds - - - - - -	32 ?	

2.—At WHITLEYWOOD COMMON, about fifteen chains S.S.W. of cross-roads, on east side of road; and a little more than half-a-mile N.W. of Shinfield Church.

Boring made and communicated by MR. CALLAS (of Reading). 1887.

Surface of ground about 151 feet above Ordnance Datum. Shaft for reservoir, 26 feet, the rest bored. (4-inch tube.)

Water rose to 17 feet 6 inches from surface of ground.

London Clay	Blue clay - - - - - - -	90
	Black sand [basement bed] with water	?

Windsor.

1. BURGE AND CO.'S BREWERY. 1888.

Made and communicated by MESSRS. ISLER. Further particulars from MR. W. MENZIES.

Geol. London Vol. ii. p. 5.

Supply plentiful. Water rose to 20 feet from the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[River Drift]	Dug well (the rest bored) -	—	6
	Gravel - - - - -	8	14
[London Clay]	Blue clay - - - -	5½	19½
[Reading Beds] 69½ feet.	Running sand - - - -	27½	47
	Clay - - - - -	4	51
	Clay and sand - - - -	25	76
	Coloured [mottled] clay - -	5	81
	Blue clay - - - - -	8	89
Chalk - - - - - - - - -		? 211	300

W. W.

2. THE CASTLE. In the Round Tower.

Illustrated London News, 11th June, 1887, p. 664. Geol., London, Vol. ii., p. 5.

Shaft lined with stone for 60 feet.

Through mound, to original surface -	50	160½ feet.
Chalk, ? rubbly at top - - -	110½	

? to water (level of Thames).

A well in the Quadrangle, about 370 feet from the above, is 120 feet deep (? to water), the water-level being some feet lower than in the former case, according to the figure. W. W.

3. Clewer Lodge, Spittal. (Captain Bulkley's.)

From Mr. Trench's Note-book. (Memoirs, vol. iv., p. 426, and Geol. London, vol. ii., p. 5.)

Sunk for 40 feet, the rest bored.

	Thickness.	Depth.
	Feet.	*Feet.*
[London Clay] Blue clay	88	88
[Reading Beds, 87 feet] Black sand	4	92
Coloured [mottled] clay	66	158
Sand	3	161
White stone	2	163
Green clay and a few flints	5	168
Green sand and flints	7	175
Chalk	40	215

4. Mr. Ramsbottom's.

From Mr. Polwhele's Note-book. (Memoirs, vol. iv., p. 426, and Geol. London, vol. ii., p. 6.)

Clay. [? London Clay and Reading Beds], 116 feet.
Sand [Reading Beds].

According to Mr. J. Simpson (MS. in Library Inst. Civ. Eng.) the total depth is 442 feet, and water rose to 60 feet below the ground.

5. Royal Brewery, Peascod Street. 1868. ?

Communicated by Mr. Redrup. (Memoirs, vol. iv., p. 426, and Geol. London, vol. ii., p. 6.)

[Reading Beds.] { ? Clay at top / Running sand / Mottled clays } to Chalk, 72 feet.

6. St. Leonard's Road. Messrs. R. White and Sons

Bored and communicated by Messrs. Isler and Co.

Water-level 9 feet down, lowered to 18½ by pumping. Supply 1,000 gallons an hour.

	Thickness.	Depth.
	Ft. in.	*Ft. in.*
Dug-well. The rest a bore of 5 inches diameter	—	3 0
[River Drift.] Clay and ballast	16 10	19 10
Hard [London] blue clay	98 2	118 0
[Reading Beds, 77 feet.] Mottled clay	40 0	158 0
Mottled clay and sand	3 0	161 0
Sand	10 0	171 0
Sand and clay	4 0	175 0
Black clay	2 6	177 6
Mottled clay	17 6	195 0
Chalk and flints	162 8	357 8

W. W.

7. Brewery (late Jenning's), Thames Street. 1845. ?
(Memoirs, vol. iv., p. 426, and Geol. London, vol. ii., p. 6.)
Water rises to 12 feet below the ground.

Gravel 25 or 30 - - - - - -	530 feet.
Chalk, about 500 - - - - - -	

8. The Conservatory (or George IV.'s) Cottage, near Cumberland Lodge.

From Mr. Polwhele's Note-book, and from Dr. James Mitchell's MSS., vol. iii., p. 237. (Memoirs, vol. iv., p. 427, and Geol. London, vol. ii., p. 6.)
Water rose 240 feet. Well now closed.

	Thickness.	Depth.
	Feet.	*Feet.*
Sand [Bagshot ? or uppermost part of London Clay] and gravel (gravel and yellow clay in Dr. Mitchell's account) - - - - -	56	56
London Clay - - - - - - -	314	370
[Reading Beds.] Mottled clay - - - -	26	396
[Reading Beds.] Sand (touched) - - -	—	—

W. W.

9. Windsor Water-works, acquired by the Corporation from the Windsor and Eton Waterworks Company in 1884.

The following particulars are extracted from Dr. H. Timbrell Bulstrode's Report to the Local Government Board upon the Sanitary Condition of the Borough of Windsor (1900). (*See* also p. 110). J. H. B.

"The water is derived from wells situated near to Eton College, most of hem on an island known as Tangier Island . . . . three of the four wells now [1900] in use are cut off from the mainland by means of a stream or streams. These wells are 26 to 28 feet in depth, the greater portion of this depth being sunk in the river-gravel which hereabouts overlies the Chalk. This gravel, which is of a somewhat fine character, is said to be 20 to 24 feet in depth.

"Each well is some 8 feet in diameter, and is lined internally by cast-iron cylinders. These cylinders, with the exception of the uppermost, are all perforated in such a manner as to allow of, or rather to encourage, the gravel-water entering the wells. Owing to the increased demands for water, an attempt was made a few years ago to bore down into the Chalk at the bottom of well No. 2, but, although 135 feet 6 inches of Chalk was perforated, the additional yield of water was practically *nil*, a fact which would in itself appear to militate against the probability of there being fissures in the Chalk hereabouts. In consequence of the failure to procure an additional supply from this source, well No. 4 was sunk, and the total supply is now, I am informed, quite sufficient for the needs of the district. . .

"The top of the wells has been raised above the level of the surrounding ground in order to prevent the entrance of river water during times of exceptional flood in the Thames valley; for instance, in 1894 the water actually overflowed into certain of the wells. There is no provision for storage, the water being pumped direct into the mains, nor is any filtration considered necessary. . . . .

"The Corporation now supply a population of about 20,000 in Windsor, Eton, and Clewer, the daily supply being, I am told, at the rate of about 35 gallons per head.

"Windsor Castle is in the main supplied by its own water-works, which are situated near Romney Lock, but the Dean's and Canon's residences, and the Horseshoe Cloisters, which form part of the Castle, are supplied by the Corporation."

Winkfield.

1. The Plain (Captain Forbes'.)

J. Simpson, MS. in Library Inst. Civ. Eng. (Memoirs, vol. iv., p. 427, and Geol. London, vol. ii., p. 6.)

Water rose to a height of 70 feet below the ground.

To Chalk, 304 }
In „ 126 } - - - - - - - - 430 feet.

W. W.

2. (The Row.) [? same as the above.]

Dr. J. Mitchell's MSS., vol. iii., p. 237. Memoirs, vol. iv., p. 427, and Geol. London, vol. ii., p. 6.)

Blue clay, 270 feet.

3. New Lodge, Windsor Forest, M. Van de Weyer's. 1893.

The site of the boring is at the southern border of the grounds, about 150 yards from the house, and about 130 westward from Nobbscrook Farm, and over 3½ miles nearly W.S.W. of Windsor Castle.

Boring made and communicated by Messrs. Le Grand and Sutcliff.

The following section and particulars are from the published account by Messrs. W. Whitaker and A. J. Jukes-Browne, to whom specimens were submitted. Quart. Journ. Geol. Soc., vol. 50, pp. 496–501. *See* also Hull, *ibid*, p. 152.

Site 218 feet above Ordnance Datum.

Shaft 8 feet, the rest bored.

The water from the Lower Greensand rose to 7 feet 8 inches above the surface of the ground ; that from the Chalk was 151 feet down. (*See* p. 112).

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[London Clay]	Brown clay	6	0	6	0
	Blue clay	54	0	60	0
	Black [flint] pebbles	1	0	61	0
	Blue clay and clay-stones [septaria]	54	0	115	0
	Brown dead [clayey] sand [? basement-bed]	15	0	130	0
	Green sand, shells and water [basement-bed]	6	0	136	0
[Reading Beds, 78 feet.]	Mottled clay	14	0	150	0
	Very hard yellow clay	14	0	164	0
	Brown sand with water	11	0	175	0
	Mottled clay and sand	17	0	192	0
	Light[-coloured] blowing sand	22	0	214	0
Upper Chalk, 329 feet. Solid masses of flint, several feet thick, in part.	Chalk and flints	79	0	293	0
	„ „ sticky	30	0	323	0
	„ „ hard	159	0	482	0
	„ „ sticky	21	0	503	0
	„ „ „ and brown	32	6	535	6
	Black chalk	7	6	543	0
[? Chalk Rock.]	Hard grey chalk and flints	8	0	551	0
Middle Chalk, 169 feet.	Hard white chalk	13	6	564	6
	Grey sticky chalk and flints	2	6	567	0
	„ „ a flint at 578 feet (Another account says hard white chalk, 20 feet.)	15	0	582	0
	White sticky chalk	8	0	590	0
	White chalk	27	0	617	0
	Grey sticky chalk	6	0	623	0
	Hard white chalk	25	0	648	0
	Hard, sticky, white chalk	2	0	650	0
	Hard chalk	29	6	679	6
	Hard white chalk	14	6	694	0
	Grey gritty chalk	4	0	698	0
	Chalk marl	4	0	702	0
	Hard white chalk	4	0	706	0
	Very hard white chalk [? Melbourn Rock]	14	0	720	0

WINKFIELD. 3. NEW LODGE, Windsor Forest—*continued.*

	Thickness.		Depth.	
	Ft.	*in.*	*Ft.*	*in.*
[Lower Chalk, 219 feet.] [Chalk Marl, 72 feet.] White and green chalk [? *Belemnitella* Marl]	6	0	726	0
White chalk	27	0	753	0
Hard white chalk	44	0	797	0
Free-cutting white chalk	12	0	809	0
Hard white chalk	15	0	824	0
Very hard white chalk	7	9	831	9
Very hard grey chalk	17	1	848	10
Hard dark-grey chalk [? Totternhoe Stone]	18	2	867	0
Blue clayey chalk. Specimen with minute flakes of mica and some black specks	1	0	868	0
Dark brown clayey chalk	21	0	889	0
Grey chalk, with hard bands from 1 to 13 inches thick. Specimen from 927 ft.: like the hard beds of the Chalk Marl (with 'spheres,' HILL). Specimen from the base: dark grey marl, with quartz-grains, mica-flakes, and black particles [? glauconite]; small bits of glauconitic marl	50	0	939	0
Upper Greensand. Some resembling the Upper Greensand at the Wallingford and Moulsford borings. Specimen from 939 ft. 8 in.: dark-grey plastic Chalk Marl with many glauconite-grains, enclosing bits of a harder or drier, more glauconitic marl. After treatment with acid and washing, a bit left about two-thirds of its bulk, consisting almost wholly of quartz and glauconite. Probably Chalk Marl has been carried down by the boring-tool into the sand. Specimen from 942 ft. 8 in.: hard grey marl full of grains of quartz and of glauconite. Specimen from 956 ft.: calcareous malmstone, having a matrix of granular calcite, with many angular bits of calcitic shell, many sponge-spicules and minute scattered grains of quartz and of glauconite. This slide also shows a great number of black specks (pyrites?) which fill chambers of very small foraminifera (*Textularia* and others). Specimen from 956 ft. 8 in.: hard, compact, grey stone, sandy, micaceous, fine-grained. Specimen from 960 ft.: hard, compact, grey sandy stone, with some calcareous matter. Specimen from 968–970 ft.: fine-grained sandy stone like the last, but with little calcareous matter	31	0	970	0
[Gault, 264 feet.] Gault [clay]. Became dark and sticky at 994 ft. (sample brought up dry). Specimen from 1,006 ft. like Lower Gault (W. HILL). Hard, dry, friable [light-grey] clay at 1,050ft. to 1,056 ft. Then dark soft clay [grey, with some bits of a lighter colour], impeding the progress of the pipes. *Ammonites splendens* at 1,170 ft. when the clay beomes harder. *Inoceramus sulcatus* at 1,170 and 1,179 ft (E. T. NEWTON). Phosphatic nodules from 1,171 ft.	260	0	1230	0
Brown and dark-greenish sandy clay. Sand only observed near the base. At the base a layer of phosphatic nodules	4	0	1234	0
Lower Greensand. Fine sharp, light-brown sand, of the ordinary character of that in the Folkestone Beds. With water	9	0	1243	0

Wokingham.

1. WATER-WORKS. On the Finchampstead road, near the junction of the L. & S. W. and S. E. Railways. 1880.

Prof. T. R. JONES, *Geol. Mag.*, dec. ii., vol. vii., pp. 421-424, with additional particulars from J. W. GROVER, *Proc. Inst. C. E.*
166 ft. above Ordnance Datum.

Shaft 264 ft. [6 ft. in diameter to 200 then 4 ft.], then the rest bored (24 to 15 inches) and lined to the depth of 10 ft. in the chalk.

Yield, from the chalk, 15,000 gallons an hour, at a level of 70 ft. below the surface. Rose to within 38 ft. of the top. [A considerable quantity of water was found in the Reading Beds, which rose to within 40 ft. of the surface, as stated on coloured-section by J. W. GROVER, C.E., supplied to me by MR. A. M. QUILL, Engineer to the Wokingham District Water Company, who informs me that the yield at the present time (November, 1900) is 8,000 gallons an hour, and the Water-level 132 ft. from the surface. (*See* p. 112). J. H. B.]

		Thickness.	Depth.
		Feet.	*Feet.*
Surface soil		1	1
London Clay, 273 ft.	Fawn-coloured and brown clay (*Cardium*) in lower part	11	12
	Blue and compact clay, drying dark-grey, with fossils and layers of septaria. Layer of flint-pebbles at 52 ft. (from surface of ground). Loamy, with water at 70–82 ft. Thin seam of black sand at 73 ft. Loamy at 125–137 ft. Large flint pebbles at 209 ft. Seam of black sand, with water, at 259 ft.	252	264
	Basement-bed, 10 ft. — Dark grey loam sand and shale [laminated clay], *Cytherea*; yielded 120 gallons of water an hour	1	265
	Basement-bed, 10 ft. — Fine sand with green grains, *Ditrupa*	1	266
	Basement-bed, 10 ft. — Cement stones	2	268
	Basement-bed, 10 ft. — Dark sand with shells	1	269
	Basement-bed, 10 ft. — Clay, with pyrites	1½	270½
	Basement-bed, 10 ft. — Sand (with thin seams of clay) and sandstone, *Ditrupa*. Small black flint pebbles. Water rose 126 ft. and would have risen more but for pumping	3	273½
	Basement-bed, 10 ft. — Glauconitic clay	½	274

1. WATER-WORKS—*continued.*

		Thickness.	Depth.
		Feet.	*Feet.*
Woolwich and Reading Beds, 70 ft.	Mottled clay	2	276
	Reddish and then brownish clay	9	285
	Mottled clay	4	289
	Sandy clay	1	290
	Friable clay and sandstone	1	291
	Brown loamy clay	2	293
	Hard mottled clay	2	295
	Grey sand, from which water rose to within 42 ft. of the surface	2	297
	Loamy clay	2	299
	Sand and clay	2	301
	Mottled green clay	2	303
	Sandy clay	3	306
	Mottled brown and red clay	6½	312½
	Sandy clay	1½	314
	Greenish loamy clay	2	316
	Mottled clay	1	317
	Brown clay	4	321
	Grey sand	½	321½
	Mottled clay, with thin seams of greenish sand	3½	325
	Mottled clay with sand	3	328
	Grey sand, with a thin seam of clay in the middle	15	343
	Green sand, with green-coated pebbles (a few) and sub-angular flints	1	344
Chalk, 64 ft.	Soft grey chalk, the greyness perhaps owing to admixture of sand from above (in perforations)	8	352
	White chalk, with bands and scattered nodules of flint. Water yielded from soft chalk under a foot band of flint below 402 ft. Ending in hard rock (flint)	56	408

2. Water-works, nearly half-a-mile N.E. of Toutley Hall. 1896.

The following particulars are taken from a large coloured-section and from information supplied to me by Mr. A. M. Quill, Engineer to the Wokingham District Water Co.—J. H. B.

About 150 feet above Ordnance Datum.

Shaft 6 feet in diameter, with 9-inch brick-steining to 200 feet; the rest bored and lined with 6-inch tube, which rests on the chalk at 243 feet.

Water-level 20 feet from the surface, which has not altered.

Yield 5,000 gallons per hour. (*See* p. 112).

		Thickness.	Depth.
		Feet.	*Feet.*
[London Clay 175 feet.]	Blue clay, with slight variations in the colour between 55 and 92 feet; loamy with occasional veins of black sand ¼ to ½ inch thick from 111 to 143 feet. Clay-stones 6 inches thick [septaria] at 34, 48, 92, 111, 131 and 133 feet. Bed of shells 3 inches thick at 55, and 2 inches thick at 150 and 159 feet. Bed of pebbles [flint] 2 inches thick at 111½ feet, and bed of grey sand one inch thick at 143 feet. (Bellows to provide air for men working in shaft were fixed at 83 feet, as the candles at this level would not burn) - - - -	164	164
	[Basement-Bed] Sand, with water, rock at 164, very hard cement-stone at 175, bed of shells at 168, and bed of pebbles [flint] at 173 feet -	11	175
[Reading Beds 68 feet]	Loamy mottled clay - -	11	186
	Running sand - - -	3	189
	Mottled clay, with thin layers of greenish sand from 200 to 230 feet (owing to sand and water at 200 feet the shaft could no longer be proceeded with) - - -	41	230
	Running sand (filled up the well and caused much trouble) - - - - -	6	236
	[Bottom-bed] Varying beds of green sand and red loamy clay, with bed of flints at base - -	7	243
[Upper]	Chalk (touched).		

Woodley.

The Chequers. Messrs. Hawkins & Son.

Bored and communicated by Mr. Callas.

Water-level 53 feet from surface.

		Thickness.	Depth.
		Feet.	*Feet.*
	Soil	3	3
Drift	Gravel	16	19
[London Clay, 43 feet.]	Dark blue clay	18	37
	Light blue clay	1	38
	Grey sand	4	42
[Reading Beds, 26 feet.]	Mottled clay	19	61
	Yellow sand	2	63
	Mottled sand and clay	5	68

Woolhampton.

1. Woolhampton Park.

Sunk and communicated by Mr. Piper, of Bucklebury.

Lower Bagshot or London Clay ?	Brown clay	7 feet.
	Pebbles and dark clay	

2. Jubilee Well, close to "Angel" Inn.

Sunk and communicated by Mr. Piper.

[Alluvium]	Soil	1½	11½ feet.
	Blue clay	6	
	Peat	3	
	Malm	1	

F. J. B.

3. St. Mary's College. 1889.

Made and communicated by Messrs. Le Grand & Sutcliff.

365 feet above Ordnance Datum. Water-level about 161 feet down.

		Thickness.	Depth.
		Feet.	*Feet.*
[Plateau Drift?]	Loamy clay	3½	3½
	Ballast [gravel]	½	4
[Bagshot]	Loamy sand	26	30
London Clay, 176 feet.]	Blue sandy clay	21	51
	Pebbles	½	51½
	Blue sandy clay, with 8 inches of stone [septaria] at 57½ and a foot at 61	39½	91
	Pebbles	1	92
	Blue sandy clay	68	160
	Blue clay, with 6 inches of stone [septaria] at 165	35	195
	[Basement-bed] Clay and shells	½	195½
	[Basement-bed] Blue sandy clay	4½	200
	[Basement-bed] Dead brown sand	6	206
[Reading Beds, 72½ feet]	Mottled clays	35	241
	Brown blowing sand	4	245
	Light-brown mottled clay	5	250
	Light-blue sandy clay	4	254
	Brown sand	2	256
	Grey sand	5	261
	Blue clay	2	263
	Grey sand	10	273
	Sandy clay and shells [*Ostrea?*]	5	278
	Grey running sand	nearly ½	278½
Chalk and flints		over 141½	420

W. W.

4. Public Well (Jubilee), given by Miss Blyth. 1897.

Bored and communicated by Mr. Edward Margrett.

Water from the Chalk rose 18 feet above the surface.

		Thickness.	Depth.
		Feet.	*Feet.*
[Valley Drift, 26 feet]	Loamy clay	5	5
	Peat	12	17
	Soft white clay (surface water-level	1	18
	Ballast [gravel]	8	26
[London Clay, 8½ feet.]	Clay with round stones [? flint-pebbles] and pyrites	7	33
	Rock	1½	34½

4. Public Well—*continued.*

		Thickness.	Depth.
		Feet.	*Feet.*
[Reading Beds 79½ feet]	Mottled clays (with layers of shelly rock) [? layers on top of mottled clays, belonging to basement-bed of the London Clay*]	23	57½
	Sand and water (rose to surface-level)	5	62½
	Flint ballast [pebbles] in clay	1½	64
	Loamy sand and water (rose to 4½ feet above the surface)	8½	72
	Sandstone	3	75
	Clay	2	77
	Sharp sand (water rose 7½ feet above the surface)	1	78
	Mottled clays	11	89
	Grey sand and water (rose 16 feet above the surface)	5	94
	Clay with pyrites	2	96
	Sand	8	104
	Flint ballast [pebbles]	1	105
	Sand, water-worn stones and pyrites	5	110
	Clay with shells	4	114
[Upper Chalk, 48 feet]	Spongy chalk	6	120
	Hard Chalk and flints	42	162

[* Most probably about 7 feet of the clays containing the layers of shelly rock belong to the London Clay, increasing its thickness to 15½ feet, and reducing that of the Reading Beds to 72½ feet, the same as in the section of St. Mary's College. J. H. B.]

Wootton.

Abingdon Water-works wells, at the cross-roads nearly half a mile S.S.E. of the Manor Farm.

Communicated by Mr. A. T. Atchison to Mr. De Rance, 1877.

See Memoir "The Jurassic Rocks of Britain," vol. v., p. 125.

		Thickness.	Depth.
		Ft. in.	*Ft. in.*
[Coral Rag, 31½ feet.]	Ragstone	31 6	31 6
[Calcareous Grit, 11 feet.]	Solid blue stone	2 6	34 0
	Clean sand	6 0	40 0
	Solid blue stone	2 6	42 6
[Oxford Clay.]	Soft soapy clay	34 6	77 0

Wytham.

A little west of the South Lodge of Wytham Park. 1829.

Boring made by E. Bagnall, Mine-agent, Baskerville House, Birmingham.

"Section presented to the Oxford Museum in 1849 by the Earl of Abingdon. The terms employed by the workmen are used in the coal-fields of Staffordshire for strata somewhat analogous." From "Geology of Oxford and the Valley of the Thames," by Phillips, pp. 296–297.

The classification in square brackets by Mr. H. B. Woodward.*

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
† Drift.	Loamy ground	12	0	12	0
	Quicksand and water	3	0	15	0
[Oxford Clay and Kellaways Rock, 258 feet.]	Blue clunch	68	6	83	6
	Light clunch	1	6	85	0
	Blue clunch	28	6	113	6
	Clunch bines	4	6	118	0
	Blue clunch	29	0	147	0
	Clunch bines	2	0	149	0
	Blue clunch	28	0	177	0
	Brown clunch	3	0	180	0
	Mingled ground	11	6	191	6
	Strong grey rock	1	0	192	6
	Grey clunch	2	0	194	6
	Brown clunch	1	6	196	0
	Mingled ground	17	0	213	0
	Blue clunch bines	6	0	219	0
	Mingled ground	4	0	223	0
	Brown clunch	17	6	240	6
	Mingled ground	9	6	250	0
	Blue clunch	5	0	255	0
	Dark blue rock	3	6	258	6
	Dark parting clunch	0	6	259	0
	Dark blue rock	2	6	261	6
	Dark clunch	11	6	273	0
[Cornbrash]	Strong blue rock	10	6	283	6
	Dark parting clunch	1	0	284	6
	Strong blue rock	5	6	290	0
	Strong parting clunch	0	6	290	6
	Blue rock	1	6	292	0
[Forest Marble 24½ feet.]	Clunch and clunch bines	6	0	298	0
	Grey rock	18	0	316	0
	Dark parting clunch	0	6	316	6

* See Geological Survey Memoir on "The Jurassic Rocks of Britain," vol. v., pp. 42–43.

WYTHAM—*continued.*

		Thickness.	Depth.
		Ft. *in.*	*Ft.* *in.*
Great Oolite, 96 feet.]	Light rock	30 3	346 9
	Light parting clunch bines	0 9	347 6
	Light rock	5 0	352 6
	Very dark parting	2 0	354 6
	Grey rock	1 4	355 10
	Dark parting	0 8	356 6
	Clunch bines	7 6	364 0
	Grey rock	3 0	367 0
	Dark parting	1 6	368 6
	Grey rock	2 6	371 0
	Blue bines	2 0	373 0
	Mingled ground	3 0	376 0
	Blue rock	9 0	385 0
	Dark ground	1 6	386 6
	Mingled ground	7 6	394 0
	Light rock	16 6	410 6
	Black bat	2 0	412 6
[Inferior Oolite 35½ feet.]	Rock	35 6	448 0
[Upper Lias 14½ feet.]	Mingled ground	11 6	459 6
		3 0	462 6
[Middle Lias and Lower Lias.]	Ironstone	0 4	462 10
	Clunch mixed with ironstone	132 0	594 10
	Dark clunch	2 0	596 10

"The boring was carried to the depth of 211 yards, the strata the same as that at 596 feet."—C. WEBB.

Yattendon.

1 to 8. Communicated by Mr. JOHN HIGGS to Mr. F. J. BENNETT.

1. Dr. BREACH'S.

[Reading Beds] Clay - - - - - 10
[Upper Chalk] Chalk, with flints - - 118 } 128 feet.

2. MANOR HOUSE.

10 feet of water.

[Reading Beds] Sand and clay - - - 20
[Upper Chalk] Chalk, with flints - - 115 } 135 feet.

3. MANSTONE FARM.

5½ feet of water.

[Soil, etc.] Mould - - - - 5
[Upper Chalk] Chalk, with flints - - 117½ } 122½ feet.

4. "ROYAL OAK" INN.

375 feet above Ordnance Datum. 6 feet of water.

[Reading Beds] Sand and clay - - - 22
[Upper Chalk] Chalk, with flints - - 112 } 134 feet.

5. The Village Well; near the "Royal Oak."

[Reading Beds]	Sand and clay	20	131 feet.
[Upper Chalk]	Chalk, with flints	111	

6. The Homestead Farm.

21 feet of water.

[Reading Beds]	Sand and clay	18	141 feet.
[Upper Chalk]	Chalk, with flints	123	

7. The Rectory.

8½ feet of water.

[Reading Beds]	Clay	12	126½ feet.
[Upper Chalk]	Chalk, with flints	114½	

8. Yattendon Farm.

13½ feet of water.

[Reading Beds]	Sand and clay	15	139 feet.
[Upper Chalk]	Chalk, with flints	124	

ADDENDUM.

Sandleford Priory.

Mrs. Myers'.

Bored and communicated by Messrs. C. Isler & Co. to Mr. Whitaker.
Tubed 215 feet with 5-inch tube, 8 feet above surface.
Water-level 100 feet from surface. Yield 100 gallons per hour.

		Thickness.		Depth.	
		Ft.	*in.*	*Ft.*	*in.*
[Plateau]	Gravel	3	6	3	6
[Bagshot Beds]	Yellow sand	3	0	6	6
[London Clay, 118½ feet.]	Sandy clay	26	0	32	6
	Yellow clay and pebbles	12	0	44	6
	Blue clay	14	6	59	0
	Blue clay and pebbles	5	6	64	6
	Blue clay	19	6	84	0
	White clay stone	1	3	85	3
	Blue clay	34	9	120	0
	Grey chalk-flints	5	0	125	0
[Reading Beds, 92 feet.]	Mottled clay	17	6	142	6
	Blue clay	4	6	147	0
	Mottled clay	31	0	178	0
	Grey sand	22	5	200	5
	Green sand	14	1	214	6
	Sandy clay, shells	2	6	217	0
[Upper Chalk]	Chalk with flints	6	0	223	0
	Chalk	38	0	261	0
	Chalk with flints	41	0	302	0

ANALYSES OF WATERS.

Aldermaston.

Aldermaston Wharf. The Brewery. December 23rd, 1867.

Analysis by Dugald Campbell. Communicated by Messrs. Strange & Sons.

[Water from the Upper Chalk,—possibly mixed with some from the Reading Beds?] (*See* p. 17.)

The water was turbid and contained matter in suspension, but when filtered and viewed in bulk it was perfectly bright and colourless, and was free from any unpleasant taste or odour.

The matter in suspension was separated and examined under the microscope, and was found to consist of a small quantity of decayed vegetable matter, oxide of iron, and carbonate of lime.

	Grains per gallon.	
Total solid contents	27·76	
Mineral matter	27·44	
Consisting of volatilized matter by carbonization	0·32	
Oxidizable organic matter contained in 0·32 grains volatilized matter by carbonization	0·08	
Hardness before boiling	11·5	degrees.
Hardness after boiling	4·8	„

The Mineral matter was found to consist as follows:—

	Grains per gallon.
Silica	1·60
Sesquioxide of Iron	0·24
Lime, principally as Carbonate	8·24
Magnesia	1·62
Potash	0·84
Soda	1·68
Ammonia	0·024
Nitric Acid	0·028
Sulphuric Acid	0·08
Chlorine	0·50

Difference, carbonic acid combined with the lime, etc., and loss in analysis.

From the above analysis I conclude that this water is of the quality of ordinary chalk water; for brewing ales especially I prefer a water that remains after boiling considerably harder than this does. D. C.

Ascot.

Brick-Kiln Farm. From Mr. Critcher's Well. July 13th, 1877. (*See* p. 21.)

[Water from the Lower Bagshot Sand.]

Dr. Ballard's Report to the Local Government Board, July 10th, 1878.

Analysis by Dr. A. Dupré.

"The water is clear, but on standing yields a minute trace of deposit; this deposit consists of carbonate of lime chiefly, and is entirely free from animal organisms. The hardness is very moderate, and is due almost entirely to the presence of sulphate of lime. It is free from ammonia, yields

only a very small trace of albuminoid ammonia, and absorbs but little oxygen from permanganate. In its present condition it is, therefore, as far as the actual presence of organic impurities is concerned, a very pure water. The water contains however much chlorine, a very large amount of nitric acid, and comparatively speaking, much phosphoric acid. It also contains a very high proportion of alkali salts. All this indicates that the water has at some period of its history been very largely contaminated by sewage or surface drainage. At present the organic matters thus added have been very completely oxidized, and so far rendered innocuous. But oxidation may not always be so complete as it is at present, and the water would then become entirely unfit for drinking. Even at the best it is not advisable to use such water for drinking."

The analytical details are given in the following table :—

Appearance	Clear
Colour	Pale greenish yellow
Taste	Tasteless
Smell	Inodorous
Deposit	Very minute trace
Nitrous acid	None
Phosphoric acid	Much
Metallic impurities	None
Hardness before boiling	7·5 degrees
Hardness after boiling	5·2 degrees

	Grains per gallon
Oxygen absorbed from permanganate	0·011
Total dry residue	24·01
Consisting of Volatile matters	7·56
Consisting of Fixed salts	16·45
Chlorine	3·40
Nitric acid (N_2O_5)	5·18
Ammonia	0·0000
Albuminoid ammonia	0·0036

A. D. July 16 1877

Kingston Lisle.

Kingston Lisle Park. New well, 44 feet in depth. April, 16th, 1891.

Analysis by Alfred Ashby.

[Water from the Upper Greensand ;—well dug down to the Gault. (*See* p. 53)].

	Parts per 100,000.
Chlorine	3·20
Nitrous acid	0·00
Nitric acid (N_2O_5)	0·67
Phosphoric acid	heavy traces
Total solids	49·60
Free ammonia	·0038
Albuminoid ammonia	·0137
Lead and copper	absent
Hardness, Total	28·9 degrees
„ Permanent	4·6 „
„ Temporary	24·3 „

This water does not bear evidence of sewage or animal contamination when the well is finished I consider that it will be a good water.

Although hard it is rendered very soft by thorough boiling. A. A.

Sonning.

WATER-WORKS. Tube-well. 1892.

Analysis by ALFRED ASHBY.

[Water from the Upper Chalk. (*See* p. 74.)]

	Parts per 100,000.
Chlorine	1·75
Nitrous acid	0·00
Nitric acid (N_2O_5)	5·28
Phosphoric acid	heavy traces
Total solids	43·88
Free or saline ammonia	·0015
Albuminoid ammonia	·0059
Lead and copper	absent
Hardness Temporary	20·7
„ Permanent	7·1
„ Total	27·8

This is a good water; it is hard, but that is a character pertaining to the water of the district, and it is less hard than polluted water from wells in the village, whilst the greater part of its hardness can be removed by boiling.

Wargrave and Twyford.

WATER-WORKS. Well. 1896.

Analysis by ALFRED ASHBY.

Borings and headings in the Chalk under Tertiary Beds. (*See* p. 90).

	Parts per 100,000.
Chlorine	4·30
Nitrous acid	0·00
Nitric acid (N_2O_5)	1·18
Sulphuric acid (SO_3)	2·39
Phosphoric acid	traces.
Total solids	45·96
Free or saline ammonia	·0019
Albuminoid ammonia	·0046
Oxygen absorbed from permanganate at 80° Fahr. in ¼ hour	·0087
Oxygen absorbed from permanganate at 80° Fahr. in 4 hours	·0156
Lead and copper	absent
Hardness Temporary	23·94
„ Permanent	9·48
„ Total	33·42
Odour at 100° Fahr.	none
Colour and appearance in 2 ft. tube	pale greenish blue, clear
Microscopical examination	satisfactory

This is a very pure water. It is hard, but the greater part of its hardness can be removed by boiling. It has many of the characters of water from the uncovered Chalk from which the well is not far distant.

Stratfield Mortimer.

OAKFIELD. June 19th, 1895.

Analyses by PERCY A. C. RICHARDS. Communicated by Mr. G. W. TYSER.

[Water from the Lower Bagshot Beds. (*See* p. 78.)]

A. "Water drawn from the pantry tap in the house, [source] New Wells." [after having passed through from five-eighths to three-quarters of a mile of galvanized iron pipe from the reservoir.]

B. "Water dipped from the reservoir [at site] of the [three] new wells."

Analysis of A.:—

This sample possessed a perfectly distinct opalescence, and after standing exposed to air for twenty-four hours formed a refractive film on the surface.

The smell, however, was not at all stale.

A microscopic examination was made, but nothing unusual in ordinary well water was detected.

	Grains per gallon.
Free ammonia	·0042
Albuminoid ammonia	·0028
Nitrogen present as nitrates	·035
Chlorine present as chlorides	1·3
Total solids	14·35

(A qualitative examination of the solids showed them to consist of Sulphates and Carbonates together with traces of iron and a distinct amount of zinc.)

An estimation of the zinc present was then made, giving: zinc carbonate present 3·42 grains per gallon.

The total hardness was equivalent to 8·94 grains of calcium carb. per gallon.

During three hours action in the cold the oxygen absorbed amounted to ·0536 grain per gallon.

Analysis of B.:—

This sample was bright and clear and had no opalescence, whilst the microscope showed nothing abnormal to good well water.

	Grains per gallon.
Free ammonia	·003
Albuminoid ammonia	·0028
Nitrogen present as Nitrate	nil.
Chlorine present as Choride	1·3
Total solid constituents	10·5

(These last were not so white in appearance as those in the previous case, but charred rather more. Carbonates and Sulphates were present, but no lime could be detected.)

The total hardness = 4·57 grains Calcium Carbonate per gallon.

The oxygen obsorbed during three hours action in the cold was practically nil.

From the foregoing results it is evident that this is a fairly soft water, which, although pure enough when taken direct from the well, yet during its passage through pipes and storage in a cistern, becomes contaminated by the metals over which it passes, resulting in its finally containing a considerable amount of carbonate of zinc in solution.

The latter body if present to the extent of a quarter of a grain per gallon would suffice to make the water highly undesirable for drinking purposes, while in this sample nearly three and a-half grains are present.

Consequently, although satisfactory enough when taken fresh from the well, I must unhesitatingly condemn the water drawn from the tap in the house on account of the quantity of zinc it contains.

A. C. R.

Windsor.

WATER-WORKS.

(1). From the Main on Castle Hill. February 17th, 1896.

R. H. TIMBRELL BULSTRODE'S Report to the Local Government Board 29th June, 1900. (*See* also p. 94.)

Analyses by E. J. A. MIDWINTER.

[Water from the Thames Valley Gravel, from Wells 26 to 28 feet in depth near Eton College.]

	Grains per gallon.
Nitrogen as ammonia (free and combined)	0·000
Nitrogen as organic matter	0·004
Nitrogen as nitrates	0·066
Oxygen required to oxidize the organic matter present	0·031
Total solid matters	25.61
Calcium oxide (existing as carbonate and sulphate)	10·51
Magnesium oxide („ „ „)	0·42
Alkalies („ chlorides and nitrates)	1·57
Sulphuric anhydride (existing as sulphates)	3·51
Chlorine (existing as chlorides)	1·63
Carbonic anhydride (existing as carbonate)	6·80
Nitric „ („ nitrates)	0·25
Silica	0·07

The water when boiled for some time precipitated :—

	Grains per gallon
Calcium carbonate (chalk)	14·86
Magnesium carbonate	0·48

So that the constituents of the water were most probably combined as follows :—

Calcium carbonate (chalk)	14·86
Magnesium carbonate	0·48
Calcium sulphate	5·32
Magnesium sulphate	0·57
Sodium chloride (common salt)	2·69
Alkaline nitrates	0·40
Siliceous matter	0·07

The hardness of the water was 19·0 degrees, but this was reduced on boiling for 15 minutes to 4·0 degrees.

The water was bright and clear and without odour when warmed.

The water was of good quality for dietetic purposes, and comparatively free from pollution by animal matter. March 30th, 1896.

(2.) From the Windsor Mains on October 22nd, 1897.

The water was quite clear and entirely free from odour when warmed.

	Grains per gallon.
Nitrogen as ammonia	0·000
Nitrogen as organic matter	0·001
Nitrogen as nitrates	0·048
Oxygen required to oxidize the organic matter	0·031
Total solid matter	26.391
Chlorine or chlorides	1·526
Equal to sodium chlorides	2·574
Hardness in total	19·2 degrees
Hardness after boiling 15 minutes	4·1 „

The water is of very good quality ; it has been [naturally] efficiently filtered, and may be used for dietetic purposes with absolute security.

November 20th, 1897

(3) From the Windsor Corporation Main in Eton College on 25th January, 1898.

The water was clear and without odour when warmed.

	Grains per gallon.
Nitrogen as ammonia (free and combined)	0·000
Nitrogen as organic matter	0·001
Nitrogen as nitrates	0·0481
Chlorine as chlorides	1·562
Equal to sodium chloride	2·574
Oxygen required to oxidize organic matter	0·031
Total solid matter	26·391
Temporary hardness	19·2 degrees.
Permanent hardness	4·1 „

The water was of good quality, safe for dietetic purposes, and had been [naturally] efficiently filtered.

(4.) From the Mains of Windsor Corporation Water-works in Victoria Street, Windsor, on May 10th, 1898.

	Grains per gallon.
Nitrogen as ammonia (free and combined)	0·000
Nitrogen as organic matter	0·002
Nitrogen as nitrates	0·041
Oxygen required to oxidize the organic matter	0·022
Total solid matters	25·561
Chlorine as chlorides	1·42
Equal to sodium chloride	2·34
Hardness, temporary	19·0 degrees.
Hardness, permanent	0·8 „

The water was bright and clear and had no odour when slightly warmed. The water is of good quality and [naturally] efficiently filtered; there is some improvement since my last analysis was made.—June 21st, 1898.

(5.) From the Mains near the Wesleyan Chapel, New Road, Windsor, October, 1898.

	Grains per gallon.
Nitrogen as ammonia (free and combined)	0·000
Nitrogen as organic matter	0·002
Nitrogen as nitrates	0·045
Oxygen required to oxidize organic matter	0·036
Chlorine as chlorides	1·562
Equal to sodium chloride	2·574
Total solid matters	25·097
Hardness, temporary	19·0 degrees.
Hardness, permanent	4·0 „

The water was bright and clear and without odour. The water was of good quality and had [naturally] undergone efficient filtration.

November 12th, 1898.

(6.) From the Windsor Main in Park Street, on December 2nd, 1899.

	Grains per gallon.
Nitrogen as ammonia (free and combined)	0·000
Nitrogen as organic matter	0·0025
Nitrogen as nitrites	0·000
Nitrogen as nitrates	0·041
Oxygen required to oxidize organic matter	0·034
Chlorine as chlorides	1·746
Equal to sodium chloride (common salt)	3·042
Total solid matters	26·01
Temporary hardness	19·4 degrees
Permanent hardness	4·0 „

The water was very slightly turbid, the turbidity consisting of earthy matter. It was free from odour when warmed. The water is satisfactory, free from pollution, and of good quality. December 29th, 1899.

Winkfield.

NEW LODGE, WINDSOR FOREST. From a Bore-hole. May, 27th, 1893.

Quart. Journ. Geol. Soc., vol. 50, p. 501.

Analysis by Dr. B. DYER.

[Water from the Lower Greensand, at the depth of 1243 feet. (*See* p. 95.)]

	Grains.
Total dissolved matter	61·74
Loss on incineration of residue	·84
Chlorine in chlorides (equal to chloride of sodium 43·37)	26·32
Free (actual or saline) ammonia	·045
Albuminoid (organic) ammonia	·003
Oxygen, absorbed by oxidizable organic matter, etc., from a solution of permanganate of potash at a temperature of 80° Fahr. In 15 minutes	·003
" " In 4 hours	·011
Phosphoric acid	traces

No nitrogen as nitrates.

Hardness before boiling 3°, after boiling 0°.

Appearance in two-feet tube turbid. Microscopic examination satisfactory.

The dissolved matter consisted of the following (in grains) :—

Carbonate of lime	2·24	61·74
Carbonate of magnesia	·73	
Carbonate of soda	4·99	
Sulphate of soda	9·17	
Chloride of sodium	43·37	
Oxide of iron and alumina	·28	
Silica, traces of organic matter, etc.	·96	

"So far as regards organic matter this water is remarkably pure, as would be expected from the depth. The most remarkable feature about it is the presence of a large quantity of common salt. This of course is not prejudicial to health, though persons of delicate palate might detect a faint trace of salt. The hardness is only 3 degrees, so that for laundry purposes the water would be economical. It would also be excellent for boiler purposes, in the sense that it would not form a crust; though a steam-boiler, of course, would want occasional blowing-out—owing to the concentration of salt."

Wokingham.

WATER-WORKS. 1897.

No. 1. From the old well at Wokingham, 408 feet deep.

No. 2. From the new well at Toutley, 243 feet deep.

Analyses by ALFRED ASHBY.

[Water from Chalk and Tertiary Beds. (*See* pp. 97–99.)]

	Parts per 100,000. No. 1.	No. 2.
Chlorine	39·40	18·16
Nitrous Acid	0·00	0·00
Nitric Acid (N_2O_5)	0·399	0·003
Sulphuric Acid (SO_3)	4·44	6·63
Phosphoric Acid	very faint trace	faint trace
Total Solids	101·92	66·72
Free, or Saline, Ammonia	.0464	·1318
Albuminoid Ammonia	·0037	·0036
Oxygen absorbed from permanganate at 80° Fahr. in ¼ hour	·0158	·0066
Oxygen absorbed from permanganate at 80° Fahr. in 4 hours	·0265	·0112

	Degrees.	Degrees.
Hardness, temporary	10·0	13·3
„ permanent	2·6	3·2
„ Total	12·6	16·5
Lead and Copper	absent	absent
Colour and appearance in 2 ft. tube	pale greenish blue, clear	pale greenish blue, clear
Odour at 100° Fahr.	none	none
Deposit	a little oxide of iron; microscopical examination satisfactory	very slight; microscopical examination satisfactory

These are wholesome waters and organically of great purity, having all the characters of unpolluted water from wells sunk into the Chalk beneath a mass of Tertiary Beds, the water from the new well being less highly charged with saline matter than that from the old well. Thus, the chlorine, free ammonia and total solids are very high, whilst the nitric acid and the organic matter, as indicated by the albuminoid ammonia yielded and the oxygen absorbed from permanganate, are very low; the waters are fairly soft and the residues left after evaporation are strongly alkaline. A. A.

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